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ABSTRACT

Conference papers on early childhood education cover the following topics: individual variation among preschoolers in a cognitive intervention program in low income families presented by Phyllis Levenstein, programmatic research on disadvantaged youth and an ameliorative intervention program by Merle B. Karnes and others, special education and disadvantaged Mexican Americans by Armando Rodriguez, disadvantaged migrant students and remediation through vocational education by William M. Smith, remediation and practical approaches to learning disabilities of migrant students by Aris Diaz, and environmental criteria for preschool day care facilities by Randolph L. Waligura and M. Thompson. (RJ)

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Exceptional Children Conference Papers:
Environmental Influences in the Early Education of Migrant and Disadvantaged Students

Papers Presented at the
Special Conference on Early Childhood Education
The Council for Exceptional Children
New Orleans, Louisiana
December 10-13, 1969

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Preface

Environmental Influences in the Early Education of Migrant and Disadvantaged Students is a collection of 7 papers selected from those presented at the Special Conference on Early Childhood Education, New Orleans, Louisiana, December 10-13, 1969. These papers were collected and compiled by The Council for Exceptional Children, Arlington, Virginia. Other collections of papers from the Conference have been compiled and are available from the ERIC Document Reproduction Service. Other collections announced in this issue of Research in Education may be found by consulting the Institution Index under Council for Exceptional Children or the Subject Index under Exceptional Child Education. Titles of these other collections are:

Early Childhood Education - An Overview
Curriculum, Methods, and Materials in Early Childhood Education Programs
Training and Personnel in Early Childhood Education Programs
Parent Participation in Early Childhood Education

INDIVIDUAL VARIATION AMONG PRESCHOOLERS IN A COGNITIVE INTERVENTION PROGRAM IN LOW INCOME FAMILIES

Phyllis Levenstein, Ed.D.
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Note: The research described in this paper was supported by the Children's Bureau of the Department of Health, Education and Welfare, under Child Welfare Research Project R-300. Much appreciation is expressed to Helen Adelman, Arlene Kochman, and Jacqueline Wickemeyer, the research social workers who ably participated in 1967-1968 as "Toy Demonstrators" and (H. Adelman and A. Kochman) in 1968-1969 as supervisors of Toy Demonstrators. Robert Sunley, Associate Director, Family Service Association of Nassau County, functioned as Co-Director of the Verbal Interaction Project and thus as consultant and liaison between it and the sponsoring agency.

INDIVIDUAL VARIATION AMONG PRESCHOOLERS IN A COGNITIVE INTERVENTION PROGRAM IN LOW INCOME FAMILES

Phyllis Levenstein, Ed.D.

The range of cognitive gains made by low-income preschool children in two years of the home based Mother-Child Home Program has brought into sharp relief the importance of remembering that groups are made up of individuals. There has been a tendency to speak of the low-income child, or the middle income child, as if all children in a socio-economic status group fell from the same cookie cutter, to use Elizabeth Herzog's vivid analogy (Herzog, 1967). Yet there are vivid differences among the characteristics, including cognitive, of many of the children who are included in such groups, regardless of group "central tendencies". For example, one team of investigators evaluating the psycholinguistic performance of low-income children has reported the diversity found in their test scores; Sigel and Perry (1968) noted evidence in the psycholinguistic test scores of 25 "culturally deprived" nursery school children of the wide variability within this group, both quantitatively and qualitatively. I would like to contribute more evidence to encourage a move toward individualizing group data.

At the end of one year in the Mother-Child Home Program (October 1967 to May 1968), 33 low-income preschoolers, equated for low-income housing, had made an average Stanford-Binet IQ gain of 17 points, from a group mean IQ of 84.9 to an IQ of 101.9. (See Table I. C_1 and C_2 Groups refer to Comparison Groups not exposed to the full intervention.) But the great variability within the group from this mean gain ranged from a gain of 33 IQ points, in a three year old girl, to a loss of 7 points, in a two year old girl (Amy). The average IQ gain for 26 similar children new to the Program in the following year (October 1968 to May 1969) was approximately 11 points, from an IQ of approximately 90 to an IQ of approximately 101 (all preliminary results), similar to the post-test results of the previous year. And as in

TABLE 1

INTELLIGENCE TEST MEANS, EXPERIMENTAL (E), COMPARISON$_1$ (C_1), AND COMPARISON$_2$ (C_2) GROUPS

Test	E Group			C_1 Group			C_2 Group			Difference E and C_1 Groups		Difference E and C_2 Groups	
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	t[a]	Significance	t	Significance
Pretest													
Children — C or SB[b]	[illegible]	84.9	10.5	9	87.4	11.0	11	92.0	9.7	.62	n.s.	1.92	n.s.
Children — PPVT[c]	29	76.8	7.4	9	82.6	8.0	10	84.1	12.9	1.93	n.s.	2.12	$p < .05$
Mothers — PPVT	26	82.5	16.4	9	86.0	15.2	10	87.8	13.9	.55	n.s.	.88	n.s.
Post-Test													
Children — C or SB	33	101.9	14.7	9	88.4	9.5	11	94.0	8.8	2.55	$p < .05$	1.66	n.s.
Children — PPVT	29	89.0	12.6	9	78.6	12.5	10	88.8	13.0	2.13	$p < .05$	.04	n.s.
Mothers — PPVT	26	84.2	13.6	9	82.8	9.3	10	87.5	14.8	.29	n.s.	.61	n.s.
Change													
Children — C or SB	33	+17.0	10.6	9	+1.0	9.0	11	+2.0	9.3	4.03	$p < .001$	4.08	$p < .001$
Children — PPVT	29	+12.2	12.3	9	-4.0	9.6	10	+4.7	16.3	3.51	$p < .01$	1.48	n.s.
Mothers — PPVT	26	+1.8	8.7	9	-3.2	11.8	10	- .3	7.4	1.3	n.s.	.65	n.s.

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[a] Two-tailed test.

[b] Cattell or Stanford-Binet.

[c] Peabody Picture Vocabulary Test.

1967-1968, the variability was very large, from a gain of 24 points, in a two year old girl (Flora), to a loss of 4 points in a two year old boy (Chester).

With the variability already obvious in the 1967-68 test results, the Verbal Interaction Project (the investigation which created and is studying the Mother-Child Home Program) tried to track down the group variables associated with the group diversity. The 33 children were divided into High Gainers (at or above the group mean) and Low Gainers (below the group mean), and the characteristics of the groups were studied in relation to the high or low status of the group gain. Almost no significant differences were found between the groups on a large number and range of variables, ranging from children's sex and age, and the background characteristics of the child's family, to such intervention variables as number of Home Sessions. Similar data for 1968-1969 have not yet been analyzed, but inspection suggests that the results will not differ substantially.

What then causes such wide differences in the responses of some children to an intervention Program which was obviously successful (at least on a short range basis) for most of the subjects? Why did a few children gain relatively little, or even regress cognitively? And why did a few children make IQ gains in amounts which can be conservatively described as spectacular? It is the aim of this report to share with you not only the presence of considerable variability in our data, but also some of the guesses we are beginning to make about some of the sources of the wide IQ gain variation -- and our continued questions about the sources of others.

Before going further, it is necessary to describe briefly the Verbal Interaction Project's cognitive intervention, the Mother-Child Home Program (described in more detail in Levenstein, 1969a and 1969b). As the name suggests, it has focused, since its inception as a pilot project in 1965 (Levenstein and Sunley, 1968) on the low-income mother-(preschool)-child dyad. From two years of experience with the Program, and almost half of a third, we are beginning to realize that although the focus on the mother-child dyad remains indispensable, the total family is often involved in the intervention. But the mother-child dyad is central to the intervention. The Program, utilizing the cognitive growth model of BRUNER's (1966) "instrumental conceptualism" consists mainly of stimulating, in Home Sessions, verbal interaction within the dyad around verbal interaction stimulus materials, or "VISM". In spite of the formidable label, these are commercially available toys and books, selected to fulfill a large number of criteria formulated after the pilot project, and permanently assigned to the two or three year old preschoolers. The VISM set the non-didactic tone of the intervention, and the interveners are called "Toy Demonstrators". In the first full year of the Program, 1967-1968, professional social workers pioneered this role in determining the effectiveness of the Program and in operationalizing the concept of "verbal interaction". To achieve the latter, the verbally encouraging behavior of child, mother, and Toy Demonstrator was rated and recorded for every session; the categories of the Toy Demonstrator's behavior (the children's IQ gains having testified to their effectiveness) were then translated into "verbal interaction techniques" guide sheets written for every VISM (12 books, 11 toys) used in the Program after the first year. These were then utilized to aid the social workers in training and supervising non-social worker interveners to become Toy Demonstrators. The new Toy Demonstrators, during 1968-1969 and in the current research year of 1969-1970, fell into two major groups: volunteers, mainly recruited through the sponsoring family service agency, who were women usually of middle-class income and college education; and paid interveners, women who were formerly mother-participants in the Program and were always of low-income and less than college education. As noted above, preliminary results for 1968-1969 indicate that the group of children visited by these non-social worker interveners achieved a similar mean post-test IQ, about 101, as the group exposed to the Program in the first year. Thus the Mother-Child Home Program was demonstrated to be not only effective but practicable and flexible in terms of utilization of a variety of personnel both less expensive and more readily available than trained social workers.

As indicated above, the social workers during the first year of research rated the children after each Home Session in categories of behavior judged to be verbal behavior or closely related to verbal behavior. There were eleven of these: verbalizes information, non-verbal communication of information, responds verbally, speaks, demonstrates adequate concentration, shows divergence, shows positive motivation, manipulates toy, interacts socially, shows interest in book and accepts toy introduced. Like the categories for the mother and Toy Demonstrator, these were rated on a scale from one (not present) to four (markedly present) for every session.

When the group was divided, at the 17 point mean gain in IQ, into High gainers and low gainers, no statistically significant difference was found between them on the category ratings. But when the frequency of observed behavior was scrutinized on the 59 subcategories of the 11 larger categories, an interesting dichotomy began to emerge. By inspection, the children's performance throughout the intervention on 24 out of the 59 subcategories seemed to show marked differences between two groups of subjects. More systematic data analysis confirmed that the 33 children fell into two uneven groups in respect to their performance on 17 out of the 24 subcategories: a group of 7 lagged significantly behind a group of 26 in the frequency of their performance on these 24 subcategories. And it was this same group of 7 which lagged behind the 26 other children in their IQ gains and were indeed the 7 children at the lowest end of the "gains" list. Three had actually lost 5 to 7 IQ points since the pre-test eight months before, and four had the lowest IQ gains in the total group, from 6 to 8 points. Thus children whose gains ranged from -7 to 8 were differentiated from the rest and were labeled (for this report) Low Gainers. Children who made gains of from 9 to 33 points received approximately the same number of checks throughout the intervention for most subcategories of verbally linked behavior. But out of the 24 such subcategories tested for statistical significance, the mean frequency of checks, or observations, on 17 subcategories was significantly greater for this group, labeled for this report as High Gainers, than for the lowest IQ gainers (see Table II).

TABLE II

SIGNIFICANTLY DIFFERING VERBALLY RELATED BEHAVIOR OF LOW AND HIGH GAINERS*

Verbally Related Behavior	Mean Low Gainers (N=7)	Mean High Gainers (N=26)	Difference High & Low Gainers t	p**
Questions	5.57	15.96	2.67	.01
Answers	14.57	24.46	3.01	.01
Initiates conversation	5.71	15.58	2.35	.05
Converses	4.51	14.23	1.89	.05
Verbalizes to book	7.29	11.85	2.72	.01
Associates to book	2.43	8.08	2.87	.01
Plays with VISM	12.86	22.69	3.00	.01
Cooperates	14.71	25.46	3.27	.01
Solitary play	13.86	6.58	3.45	.01
Helps	4.57	14.65	2.48	.01
Initiates activities	7.57	17.27	2.47	.01
Complies	14.43	22.35	2.84	.01
Verbalizes relationships	3.29	8.42	2.04	.05
Shifts attention appropriately	18.86	25.96	2.18	.05
Demonstrates joy	7.57	14.81	1.97	.05
Demonstrates pleasure	18.14	25.23	2.35	.05
Verbalizes pleasure	3.00	6.69	1.79	.05

*On Stanford-Binet Intelligence Scale. "Low Gain" = IQ change score of -7 to 8. "High Gain" = IQ change score of 9 to 33.

** One tailed test.

The areas in which these Low Gainers were thus deficient will probably not be surprising to the group assembled here. They were limited not only in asking questions and initiating conversations, but in answering and generally conversing. They comparatively seldom associated verbally to books read to them, or even verbalized more briefly. Consistent with the comparative immaturity thus suggested, these children also behaved on a lower developmental level than the others: they tended much less than the other group to play with the VISM, were less cooperative, played more alone, and tended not to be helpful in setting up or removing materials. Perhaps less obviously ascribable to the immaturity was their relative reluctance to initiate activities, or even to comply with suggestions. They did less verbalizing of relationships, showed difficulty in shifting their attention appropriately from one activity to another. Most striking, in a cognitive intervention program constructed around positive affective factors (or fun), these were children who showed less joy in the sessions than the other group, and showed and verbalized less pleasure during the Home Sessions.

Thus the group of seven children at the lowest end of the range of IQ gain were identified not only by their relative inability to profit cognitively in one year from the Mother-Child Home Program but by a common pattern of verbally related behavior within the intervention itself. The pattern seems to be characterized by social and cognitive immaturity and by a relatively frequent negative affective tone, which perhaps we may venture to call an absence of active happiness in the Sessions, as compared to the rest of the 33 children. An examination into the lives of these children suggests that six of the seven were indeed too burdened by their private miseries to enjoy the Home Sessions to the full. But the resemblance stops there; although related by a thread of unhappiness in family relationships, the causes of the difficulties were idiosyncratic, as some representative of these "lowest" gainers will illustrate:

AMY

This two year old, who looked bewildered and distracted on pre-test in 1967, when her initial IQ was 93, lost seven IQ points after one year of intervention, and an additional three points after another year of minimal intervention in 1968-1969 (seven VISM delivered to the mother over seven months). She was described by her social worker-Toy Demonstrator as a hyperactive, distractible child whose eyes were crossed. She was unable to concentrate, to play or share with others, and presented a serious problem in management to her mother. She was the youngest of five children in an intact family living in an exceptionally well cared for apartment. One sister, aged three, was also in the Program, starting with an almost identical IQ of 94 but ending with a 26 point gain after one year. The sister was an alert, goal and people oriented child, in dramatic contrast to Amy. Shortly before the end of the intervention, the mother took a full-time unskilled but satisfying job, and not only terminated the intervention but placed the sister in a good day care center and Amy (too young for day care) with a local baby sitter who also cared for many other children. The sister adjusted well to the new regime, but Amy's behavior became even more disorganized and harder to control as she grew larger and stronger. At post-test, at the end of the first year of intervention, the psychologist noted that Amy was "hyperactive but contained by her mother's quick firmness and threat of hitting. She seems to use her left eye only and orients herself in that direction. She confused personal pronouns ('she' for 'I'), shows marked perseveration and poor pronunciation of words. She is moderately interested in the test material but must be constantly urged and called back to attention."

BRENDA

Brenda, another two year old, had an IQ of 94 on pretest in 1967 and was described at that time by the psychologist as "silent, negative. Seems to be a very angry child; she cooperates on the Peabody only when encouraged to 'hit' the pictures, which she does very intensely. Impression is of potentially higher IQ." During the first year of intervention Brenda gained seven IQ points, but after another year of minimal intervention (seven VISM delivered to mother over seven months), she had lost not only this gain but three additional IQ points, so that her most recent IQ is 91. She was the second youngest of five children, the oldest of whom was eight. The mother was only 22 years old, the father ten years older. The mother's losing struggle with so much premature responsibility could be seen in the marked physical neglect of environment and children and in the social worker-Toy Demonstrator's note that she "is very harsh with the children, she has very little sense of humor, and during the sessions, which took place in the living room, she made very little effort to move even a rag or wet diaper so that Toy Demonstrator had room to sit down near her and Brenda to hold the session." Her poor motivation for the Program was also seen in broken appointments. Brenda's little sister was born early in the intervention; and at about mid-intervention, her mother was suddenly jailed for assault and battery. An aunt took charge of the home and there was an immediate dramatic change to neatness and order. She also substituted for the mother in Program Home Sessions and seemed to relate well to Brenda. But Brenda was obviously upset by her mother's absence -- regressed to wetting and needing diapers, wanted a bottle, was negative and difficult to manage. Yet she continued to show flashes of great interest in the Home Sessions, ingenuity in motor tasks, and several instances of efficacy. The social worker-Toy Demonstrator's impression during 1967-1968 was of very good innate intelligence, not fully reflected in her IQ.

CHESTER

Chester entered the Program at two years, in 1968, with an IQ of 92. By the Program's end, seven months later, his IQ was 88, a loss of four points. Although he had only two siblings, both younger than himself, two or three young cousins were usually present at Home Sessions. No father was in the home. In many Home Sessions, the mother conveyed a general impression of warmth and interest in interacting with Chester, but her behavior was erratic from week to week both to Chester and to the Program. At times she cooperated fully in keeping appointments, interacted in a loving and understanding manner with Chester, and order was apparent in the household. But almost as frequently, she seemed to withdraw from the children and household, visiting with her own friends, to the point at least once of dangerous neglect (the children found alone by the Volunteer-Toy Demonstrator, huddling naked under a blanket, with the kitchen oven burners lit). The supervising social worker, from direct contact, judged the mother's ego strength to be slight and suggested that she was seriously handicapped by feelings of depression and hopelessness.

At Final Interview Chester's mother indicated her wish to continue with the Program for a second year and will be given the opportunity, if she wishes, for family counseling during Chester's second year in the Program, from October 1969 to May 1970.* Her need for emotional support seemed highlighted by her reply to Final Interview questions about ideal characteristics of Toy Demonstrators that although a Toy Demonstrator should be "friendly but not too warm" to the child, she should be "very friendly and warm" to the child's mother.

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*Family counseling is a new intervention variable available in 1969-1970 to dyads in their second year of the Program, introduced to study the effect on IQ of combining affective with cognitive intervention.

COMMENTS ON VERY LOW GAINERS (AMY, BRENDA, AND CHESTER)

These brief case histories give the unhappy flavor of the lives of six of the seven children who benefited little or not at all from the Program. It seems clear that each child described here as representative of the six was surrounded by a cluster of negative factors, affective and/or other, which reinforced each other to impede the child's intellectual progress. While for each child there was perhaps a central major negative variable (Amy's probable neurological vulnerability, Brenda's sudden separation from her mother, Chester's experience with his mother's inconsistency), one cannot fully estimate how much the child was affected by these alone and how much by these variables in combination with others.

That seventh low gaining child? A two year old, John had a gain of only six points but demonstrated a pattern of verbally related behavior in Home Sessions similar to that of the High Gainers. His family life seemed unusually happy and stable, his three year old sister gained 22 IQ points, and he himself seemed to be a cheerful, well-adjusted little boy. Either the post-test results were unreliable, (and his Home Session verbal behavior a better predictor of his cognitive status), or he formed a subgroup of one Low Gainer not handicapped by obvious personal or family unhappiness. A follow-up study of this child will probably tell the tale.

EXTREMELY HIGH GAINERS

Although the highest gainers were not identified clearly by their verbally related Home Session behavior, chiefly because the amount of this behavior was similar for the whole group gaining more than 9 IQ points, clusters of positive factors seemed linked to the extremely high performances of some of the highest gainers, just as negative clusters were associated with the very low performance of most of the children at the opposite end of the range.

DONALD

Donald was a small, shy two year old when he entered the Program in 1967 with an IQ of 86. By the end of the 1967-1968 intervention, his IQ had risen 32 points, to 118. After minimal intervention in 1968-1969 (four Home Sessions and seven VISM over a seven month period) he made a further gain of 11 points, bringing him to an IQ of 129. He was the youngest of eight children (the oldest was 13) in an intact home where the impression was one of general warmth and mutual support among all family members, particularly among the siblings. The mother was initially guarded and skeptical about the worth of the Program, a feeling that was reinforced by Donald's almost complete lack of verbalization during Home Sessions. But she cooperated conscientiously, and by the end of the first year, having seen her "baby" grow visibly in competence and independence, she was enthusiastic, and so apparently was the rest of the family. The older brothers and sisters were playing and interacting verbally with Donald between sessions, and there was a marked increase in the father's involvement with the child around the VISM. The general family support for Donald's verbal interaction was so strong that father and siblings continued it almost independent of the mother when the latter became ill during Donald's second year of (minimal) intervention and was hospitalized away from home a large part of the time. The social worker-Toy Demonstrator noted that he continued in his four second year Home Sessions his first year pattern of almost complete silence, accompanied by a remarkably intense concentration on the activities of the Session. Reports indicated that his behavior outside of Sessions with other children was lively, verbal, and joyous.

EARL

Earl entered the Program when he was two years old, the youngest of four boys (oldest 7) but in almost a twin relationship with a young male cousin who was temporarily in the charge of Earl's mother and who was in the Program along with Earl during 1967-1968. The mother worked part-time as a domestic and at the same time, with the active cooperation of her husband, maintained a home and a family life that were outstanding for their warmth, harmony, order and attempt at provision of intellectual stimulation. She had participated, with the sibling next oldest to Earl, in the brief pilot project for the Program and, since a toy chest had not been assigned in the pilot project, had kept the relatively few VISM he received carefully in a closet, to be brought out to be played with on special occasions. She cooperated enthusiastically with the Program from the beginning, quickly learned the verbal interaction techniques, and practiced them with both children in and between sessions. Siblings and father were also actively involved between sessions, and occasionally in the Home Sessions themselves. Earl started the Program with an IQ of 77 and gained 29 IQ points during his first year in it, so that his IQ after one year of intervention was 106. The latter arose still further after a second year of intervention, which consisted of a minimal program of delivering seven VISM to his mother. His IQ at the end of the second year was 117. This child had made a total gain of 40 IQ points during his two years of intensive and minimal contact with the Mother-Child Home Program.

FLORA

Flora was a solemn, shy two year old, the youngest of eight children, the oldest of whom was ten. The family was supported partly by Welfare, partly by the father, who was out of the home for part of the intervention period. The mother applied the same competence and marked ego strengths she used in managing her well organized family and home to her initially unenthusiastic participation in the Program. She demonstrated from the beginning considerable general positive interaction with Flora, and by the end of Flora's first year in the Program (1968-1969), the amount of her utilization of the Program and of her verbal interaction with her child in Home Sessions had changed from being rated "moderate" to a rating of "large". Flora's siblings also played and interacted verbally with her very often between sessions. For her part, Flora was a rather silent, serious child during the Home Sessions, sometimes hard to involve in play, sometimes wholly captured by the VISM and by the verbal interaction techniques of mother and the volunteer Toy Demonstrator. At the end of the first year, the mother showed much thought in her expressed understanding of the goals of the Program, spontaneously commenting in the Final Interview that these were "to alert the child to her surroundings, to give her an early start in thinking and perceiving." She was also able to verbalize in considerable detail her correct impression of what activities should be carried on with Flora between sessions. She has become a paid Toy Demonstrator in 1969-1970.

Flora made a gain of 24 IQ points in the first year of the Program, starting with an IQ of 89 and ending with an IQ of 113. She is now enrolled for her second year in the Program, 1969-1970, and will be retested for cognitive gain in May, 1970.

COMMENTS ON EXTREMELY HIGH GAINERS (DONALD, EARL, FLORA)

A cheerful motif runs through all of these representative descriptions of children who made very high gains in the Program. Just as for the low gaining children, each child seems to be surrounded by a cluster of factors relevant to the amount of his cognitive gain in the Program -- only this time the cluster is a positive one, with benign factors reinforcing each other to utilize the stimulus of the Mother-Child Home Program in fostering the child's cognitive growth. Paradoxically, it is a little more difficult to pick out discrete benign variables relating to the latter than to guess at the specific negative etiology in the earlier cases. All three children share such variables as marked ego strength in the mothers, an impression of warmth and harmony in the family, and a large number of loving and supportive older siblings. But before the Verbal Interaction Project draws up too hastily the indicated prescription for Optimum Nurture of Intellect, let us consider the cases of two other high gainers, George and Harriet.

HARRIET

Harriet was a tiny two year old who began the Program in 1967 with an IQ of 80 and increased it by 29 points to an IQ of 109 at the end of the first intervention year in 1968. When she was re-tested in May 1969 after minimal intervention in the second year (seven VISM delivered to her mother over seven months), she had lost 4 IQ points, still achieving an IQ of 105. During full intervention in 1967-1968 her mother's expressed passivity during Home Sessions was extreme to the point of the mother's actually falling asleep several times during the Sessions, not surprising in view of the mother's full time night job as an aide in a local hospital. The mother's organization of home and family life seemed somewhat chaotic, and although there was only one older sibling (and one younger one born during the Program), family cohesiveness and attention to Harriet were apparently minimal. The father was living in the home. Most of Harriet's interaction in Home Sessions was with the social worker-Toy Demonstrator, who found her to be alert, interested in the materials, and verbally responsive. She noted that Harriet was given and assumed an unusual amount of responsibility for such tasks as dressing, finding her clothes, and simple jobs for her mother, apparently because of the mother's passivity, depression, and probably exhaustion. The impression was left that Harriet's large cognitive gains were the result of unknown idiosyncratic factors plus the child's own strong "effectance"* drive combined with the social worker-Toy Demonstrator's interaction with her and with the effects of her mother's participation in the Program, however minimal.

GEORGE

At his pre-test session prior to his entrance into the Program in 1967, two year old George was described as "active, vocal, imaginative, with good motor skills." His IQ then was 92, and it arose 20 points to 112 after the first year of intervention. Neither the course of intervention nor the mother's cooperation were considered optimal, to say the least. The mother frequently failed appointments, did not reply to the social worker-Toy Demonstrator's written messages attempting to arrange new appointments, seemed punitive or indifferent to George (as well as to his four older siblings) and began to leave the responsibility for Home Sessions to George's father, who was only irregularly available. Neighbors conveyed to the Toy Demonstrator their concern and anger on the children's behalf for what was obviously rather serious physical neglect. The parents' participation in Home Sessions was minimal, when indeed the latter could be arranged at all. As with Harriet, the amount of the Toy Demonstrator's direct activity in Home Sessions remained large because of the parents' resistance to being drawn into the major responsibility for verbal interaction with the child. The mother's report as to the amount of inter-session family verbal interaction with George was vague. Toward the end of the intervention period she withdrew altogether, and it was possible only to deliver the remaining VISM to George, who entered a baby sitting arrangement with an aunt when both parents began vocational training. On post-test in 1968 he was noted to be restless and rather provocative but was spontaneously verbal, captured by the test materials and gave his full attention once this occured. After a second year of minimal intervention (delivery of seven VISM over seven months to his mother), his IQ fell ten points, to 102. There had been no change in the rather disorganized family situation. George's mother had talked freely about her severe marital problems, including a legal separation, and these apparently continued.

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*To use Robert White's label for ego energy which drives humans (and animals) to have an effect on the environment through inherently satisfying activity (White, 1963).

COMMENTS ON AN ENIGMA (GEORGE, HARRIET, AND BRENDA)

The stories of George and Harriet hint that a large IQ gain associated with the Mother-Child Home Program may in some cases be linked as much to the innate strength of the child, the flexibility of the intervention,and unknown factors, as to strengths residing originally within the family itself. In regard to the Program flexibility, the amount of activity of the individual intervener is adapted, within the Home Sessions, to the amount of participation the family, and especially the mother, is willing or able to give. In assessing the responsibility for achieving high gains in children exposed to the Program, we have become aware of a continuum which extends from the mother whose cooperation is almost entirely limited to permitting Home Sessions and being present at them (a very substantial contribution in some families which have previously resisted any aid from local social agencies), to the mother at the opposite end of the continuum who from the first responds to every cue offered by the Program and needs only the VISM and the minimal demonstration of verbal interaction techniques by the intervener. But why did two children at the lower end of this continuum -- George and Brenda, the latter described earlier as a Low Gainer -- produce such different IQ gains after exposure to the Program? That is what used to be called, in another generation, the $64 question. Answer: I don't know. The one thing that seems certain about the dramatically differing effect of the Program on two children with similarly negative backgrounds is that it seems to provide still another clear instance of the failure of the cookie cutter approach.

SUMMARY OF FINDINGS

We have found in a hunt for factors associated with the wide variability of IQ change in response to our experiment with the Mother-Child Home Program, that seven children who made little or no cognitive gain in the Program could be significantly distinguished from the more successful subjects by many details of their verbally related behavior during Home Sessions. When individual and family characteristics of these children with change scores from -7 to 8, were compared with those of children who made high IQ gains from 9 to 33, the groups again seemed to be differentiated, not by single variables, but by clusters of negative factors (for low gainers) or positive factors (for high gainers). Yet even this general grouping of factors could not be applied to at least one case (George) of moderately high gain, and could be applied only with some imagination to a case of very high gain, Harriet. The difficulties of applying generalizations to specific cases (the "cookie cutter" approach) are once more illustrated.

CONCLUSIONS

The need still continues, however, to try to identify the factors, beside the Program itself, which are associated with high and low cognitive gain apparently resulting from the intervention. We suspect that some illumination may come from a more systematic investigation of affective variables which may be linked to the child's intellectual growth in the Program, and from study of the children's future cognitive gain retention. Therefore, in regard to the latter, we have already begun a longitudinal follow-up study of the amount and kind of intelligence demonstrated by children formerly exposed to the Program and of their elementary school achievement. As to the influence of affective variables, we plan in 1970-1971 to incorporate an investigation of the relationship to cognitive gain in the Mother-Child Home Program of such interpersonal and intrapersonal emotional factors as mother's child rearing attitudes, her self-esteem, and the child's relationship to father and siblings.

But we also suspect that, however refined our method, and however great the number of idiosyncratic factors we are able to identify by the data finally analyzed, there will always be an irreducible few individuals who will not be explained. Rather than construct new theories, tailor made for the mavericks, let us relish the surprises inherent in each new human being we encounter in our research and cherish the humanness that occasionally does not yield its mysteries to the empirical investigator.

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PROGRAMMATIC RESEARCH ON YOUNG DISADVANTAGED CHILDREN

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In the fall of 1965, the Institute for Research on Exceptional Children, College of Education, at the University of Illinois with supporting funds from the Bureau of Research of the U.S. Office of Education initiated a research program on preschool disadvantaged children. The research fell into two broad categories: (1) sociological focused on social variables in lower-class families which effect intellectual and educational development and (2) the development and testing of various curricular interventions for the disadvantaged child. This report concerns itself with only the programmatic research on curricular intervention. Essentially, the research was directed toward answering these four major questions:

1. What kind of intervention is most effective?
2. How long must intervention be continued to stabilize effective functioning?
3. What is the most strategic age for intervention?
4. Can an effective educational intervention be implemented by mothers at home and by paraprofessional classroom teachers?

Kind of Intervention

To answer the first question, "What kind of intervention is most effective?" the differential effectiveness of five different preschool interventions with four-year-old disadvantaged children was evaluated through batteries of standardized tests administered on a pre-post and followup basis into the public schools.

The five programs of classroom intervention may be distinguished as follows:

1. Major goals of the Traditional nursery school program were to promote the personal, social, motor, and general language development of the children. Teacher were instructed to capitalize on opportunities for incidental and informal learn ing, to encourage the children to talk and to ask questions, and to stimulate their interest in the world around them. Music, story, and art activities were scheduled regularly. Outdoor play was a part of the daily routine; indoor play focused on a doll and housekeeping center, a vehicle and block center, and a small toy center.
2. The Community-Integrated program, operated at four neighborhood centers, provided a traditional nursery school experience similar to the one above. These centers were licensed by the state and were sponsored by community groups, and classes

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were composed predominately of middle- and upper-class Caucasian children. Two to four disadvantaged children from the research class unit attended sessions at one of these four centers. Socio-economic integration was the pertinent variable rather than racial integration which was achieved in all programs. Central to the altered classroom dynamics in the Community-Integrated program was the presence of an advantaged-peer language model in addition to the teacher model provided in all programs. To the extent that children in a traditional nursery school acquire language from each other, the Community-Integrated program provided the optimum setting for verbal development.

3. The *Montessori* program was administered by the local society, and staff and classroom materials met Montessori standards. The daily schedule began with a routine health check and toileting. The group then met "on the line" for conversation, songs, finger plays, and exercises. The next half hour was devoted to "spontaneous choice" of approved materials and was followed by a second period on the line devoted to musical activities, stories, and games. A "practical life" demonstration, juice time, toileting, the silence exercise, and tidying the classroom occupied the next half hour. The final ten or twenty minutes of the session were given over to playground activities or supervised short walks. The specific nature of the "prepared environment" raised the level of structure within the Montessori classroom beyond that of the two traditional programs. The Montessori teacher did not, however, maintain the high level of specific control over the actions of the children required by the teachers in the two highly structured programs. Structure in the Montessori program derived not from direct teacher-child interaction but from the prescribed manner in which the child learned from the materials.

4. In the *Ameliorative* program directed by Karnes, verbalizations in conjunction with the manipulation of concrete materials were considered to be the most effective means of establishing new language responses. A game format (card packs, lotto games, models and miniatures, sorting, matching, and classifying games) created situations where *verbal responses could be made repeatedly in a productive, meaningful context* without resorting to rote repetition; often the child could visually and motorically assess the correctness of his thinking before he made an appropriate verbalization. If the child was unable to make a verbal response, the teacher supplied an appropriate model; when he began to initiate such responses, the teacher had the opportunity to correct, modify, and expand his verbalizations.

   Each class unit (N=15) was divided into three groups on the basis of Binet IQ with one teacher for each group. The daily schedule was divided into three 20-minute structured learning periods: math concepts, language arts and reading readiness, and science-social studies. A large room where the 15 children could gather for group activities was available; however, instruction took place in cubicles which contained materials appropriate to the three content areas, and each teacher moved from one cubicle to another with her group of five children. Concepts taught during the structured periods were reinforced during directed play and especially during the music period.

   The low pupil-teacher ratio allowed for differentiation of instruction to provide a high success ratio for each child. Immediate correction of incorrect responses (often through the repetition of model sentences or through duplicate layouts of small manipulative materials) and reinforcement of appropriate responses (usually through praise) assured the children of their competencies in handling curricular requirements and enhanced their intrinsic motivation to learn. Frequent review extended content previously presented and provided opportunities to use further the vocabulary and sentence structures which had been taught.

5. In the Direct Verbal program directed by Bereiter and Englemann intensive oral drill in verbal and logical patterns was chosen as the mode for instruction since disadvantaged children were considered adequate in perceptual and motoric skills but inadequate in verbal and abstract skills. The class unit was divided into three groups of five children, initially on the basis of Stanford-Binet IQ scores and teacher evaluation. Each of the three teachers conducted a 20-minute learning period (language, arithmetic, or reading) for the three groups. The general instructional strategy was that of rule followed by application. A verbal formula was learned by rote and then applied to a series of analogous examples of increasing difficulty.

The language program focused on the minimum essentials of language competence. The objective was a kind of basic English that teacher and child may use in the conduct of elementary education--a basic English which does not embody all the concepts a child should master but which provides a medium through which those concepts may be learned. The process began by teaching a basic identity statement applied to familiar objects: "This is a _________. This is not a ________." When this statement was mastered, new language patterns were introduced: plurals, polar sets, prepositional phrases, sub-class nouns, active verbs, common tenses, and personal pronouns. The program culminated in the use of language for deductive reasoning.

The arithmetic program emphasized a "science of counting" without reference to phenomena that can be interpreted arithmetically. The disadvantaged child was assumed to lack the verbal and logical sophistication necessary to abstract arithmetic principles from everyday experiences. After the initial teaching of counting, arithmetic was taught through equations emphasizing the idea that any equation could be read as a statement of fact and also as an instruction that told how the fact could be established through a counting operation. The kind of pattern drill used in the language program to teach basic grammatical rules was also used in arithmetic.

The children were taught to read with a modified Initial Teaching Alphabet. Innovations had to do with the formation of long-vowel sounds and the convention for blending words. As early as possible, the children were introduced to controlled-vocabulary stories written by the reading staff.

Songs were especially written for the music period and provided practice in language operations which had been taught. Story-telling also provided additional practice in language operations and involved more question-and-answer activity than is common in reading stories to children.

Comparable groups were assigned to various intervention programs. All children attended preschool for a half day for seven to eight months. The mean Binet IQ of the groups was approximately 95, which is higher than the mean of the disadvantaged in the community. This distribution of the groups was established for two reasons: (1) To insure error-free data; that is, if the mean of groups is substantially below the population mean the proportion of gain due to regression to the mean and the proportion due to program effectiveness cannot be determined and (2) one of the goals of this investigation was to determine the effectiveness of the various programs with children from different ability levels.

The results for the first year on the Stanford-Binet are presented in Tables I and II. The mean gains of the Ameliorative and Direct Verbal groups were significantly higher than those of the other three groups. The distribution of IQ gains data reflect the magnitude and consistency of the gains of the children in these two groups.

Table I. Stanford-Binet Mean IQ,
Five Groups for One Year

Group	N	Test 1	Diff.	Test 2
Traditional	25	94.4	8.2	102.6
Community-Integrated	16	93.3	5.1	98.4
Montessori	13	93.4	6.4	99.8
Ameliorative	24	96.2	13.8	110.0
Direct Verbal	23	94.6	13.0	107.6

Table II. Distribution of IQ Gains
Test 1-2 (Preschool Year)

	Group									
	Traditional N=25		Community-Integrated N=16		Montessori N=13		Ameliorative N=24		Direct Verbal N=23	
Test 1-2 gain in IQ points	%	N	%	N	%	N	%	N	%	N
25 to 29	0	0	[illegible]	2	0	0	8	2	4	1
20 to 24	8	2	6	1	0	0	12	3	17	4
15 to 19	20	5	0	0	15	2	21	5	22	5
10 to 14	12	3	12	2	23	3	29	7	30	7
5 to 9	28	7	6	1	31	4	25	6	9	2
0 to 4	12	3	38	6	15	2	4	1	17	4
-1 to -5	20	5	12	2	0	0	0	0	0	0
-6 to -10	0	0	6	1	15	2	0	0	0	0
-11 to -15	0	0	0	0	0	0	0	0	0	0
-16 to -20	0	0	6	1	0	0	0	0	0	0

The language development of disadvantaged children is a major area of particular concern. Culturally disadvantaged children have the greatest difficulty expressing themselves verbally. This is illustrated by the data presented on the left-hand portion of Figure 1 which presents the initial status of the children on the three tests reflecting verbal expressive abilities (Vocal Encoding, Auditory-Vocal Automatic, and Auditory-Vocal Association). At the time of pretest the performance ranged from 6 to 15 months below chronological age. The results at the end of the first year of the intervention programs revealed little progress for the children in the Montessori and Community-Integrated programs. The Traditional group demonstrated modest gains on these three ITPA subtests. The Direct Verbal made good gains on two of the three subtests. The Ameliorative group demonstrated a nondeficit test two performance on these subtests as well as all other ITPA subtests.

During the second year the Montessori, Community-Integrated, and Traditional children were enrolled in public school kindergartens with no special attention. The Ameliorative group attended public school kindergartens and were provided with a one-hour supportive program with emphasis on school readiness. The Direct Verbal group did not attend public school kindergarten but were provided with a second year of their program with continued emphasis on language development.

The Stanford-Binet IQ data for the five groups at the end of the second year are presented in Figure 2. Only the Direct Verbal group made a substantial IQ gain the second year. This would seem to be a reflection of their special programming.

Figure 3 presents data on the ITPA total over the two-year period. Only the Direct Verbal group made continuing progress. The first preschool-year gains of the Traditional and Ameliorative groups were essentially lost in the kindergarten year.

The Ameliorative group was significantly higher in reading readiness than the other four groups (Table 3). The Ameliorative and the Direct Verbal were significantly higher than the other three groups on number readiness (Table 4).

Data on only three of the groups were available at the end of the first grade (Ameliorative, Direct Verbal, and Traditional). All groups attended public schools. The Stanford-Binet data over the three years are presented in Figure 4 and Table 5. There were no significant differences in IQ's among the three groups at the end of the first grade. Note that the N's for the groups are decreased over the previous presentation. ITPA data revealed no significant differences among the groups at the end of the first grade.

Since the intent of preschool programming is to enhance subsequent school functioning, the performance of the children on the California Achievement Tests is of major interest. Data on achievement are presented in Tables 6 and 7. The Ameliorative and Direct Verbal groups were significantly superior to the Traditional group in reading. In fact, they were nearly a half year above grade expectancy. In arithmetic the Ameliorative and Direct Verbal groups were at grade level and comparable. They were significantly higher than the Traditional group.

The data clearly support the superior effectiveness of two of the preschool interventions, the Ameliorative and the Direct Verbal.

Table III. Metropolitan Reading Readiness Mean Raw Score--Five Groups at the End of Two Years

Group	N	Test 3
Traditional	25	48.4
Community-Integrated	16	47.2
Montessori	13	48.6
Ameliorative	24	56.5
Direct Verbal	23	50.0

Table IV. Metropolitan Number Readiness Mean Raw Score--Five Groups at the End of Two Years

Group	N	Test 3
Traditional	25	12.8
Community-Integrated	16	14.0
Montessori	13	14.1
Ameliorative	24	21.0
Direct Verbal	23	18.9

Table V. Stanford-Binet Mean IQ--Three Groups for Three Years

Group	N	Test 1	Diff.	Test 4
Traditional	25	94.4	5.6	100.0
Ameliorative	24	96.2	8.1	104.3
Direct Verbal	10	96.6	13.1	109.7

Table VI. California Achievement Tests--Three Groups at the End of First Grade

Group	N	Actual grade placement mean at time of test	Reading grade level mean
Traditional	25	1.74	1.67
Ameliorative	24	1.74	2.12
Direct Verbal	10	1.72	2.17

Table VII. Arithmetic--California Achievement Tests--Three Groups at the End of First Grade

Group	N	Actual grade placement mean at time of test	Arithmetic grade level mean
Traditional	25	1.74	1.49
Ameliorative	24	1.74	1.80
Direct Verbal	10	1.72	1.80

Length of Intervention

Only a partial response can be given to the question: How long must intervention be continued to stabilize effective functioning? It would seem clear that a single year of intervention no matter how immediately effective is not sufficient to stabilize acceleration in functioning. The children in the Direct Verbal program made continuing gains in the second year of this program; however, they experienced substantial losses the following year when special intervention was discontinued and when the children attended first grade in the public schools. Thus it would seem that even two years is not sufficient. Perhaps data obtained in the Follow-Through research will shed additional light on this question.

Strategic Age for Intervention

Three studies were initiated to answer the question: What is the most strategic age for intervention?

The Ameliorative program was implemented with a group of three-year-old children and was continued for a two-year period. The results at the end of the first year of the study generally endorsed the earlier initiation of the Ameliorative program. The first-year gains of the younger group essentially matched the remarkable gains made previously by the four-year-old children in the Ameliorative program. After one year of intervention only one three-year-old child had a Binet IQ (95) below 105. On seven of the nine ITPA subtests this group was performing at or above its chronological age; on three of these seven this group was performing substantially (6 to 8 months) above its chronological age. Apparently the Ameliorative program as accommodated for three-year-old children was appropriate and highly effective.

This acceleration did not continue during the second year, but the gains made during the first year were essentially maintained. The acceleration achieved in one year represented a movement from deficit to nondeficit levels of functioning, and it may have been unrealistic to assume that such acceleration could be continued. Maintaining an essentially nondeficit performance may in itself represent a major achievement, particularly in view of the tendency of disadvantaged children in this and other projects to fail to maintain very promising first-year gains. The accelerated rate of growth achieved during the first year and the demonstrated stability of these gains the second year suggest an optimistic school prognosis for these children.

A tutorial study with infants was conducted under the direction of Samuel A. Kirk. Infants were tutored in the home by professional personnel for one hour a day five days a week. According to Kirk (1969), "The results of this study indicate quite clearly that for disadvantaged children preschool intervention at age three produces significant acceleration in mental development as measured by the Stanford-Binet, the ITPA, and other tests. When compared with the development of disadvantaged children who did not receive such intervention, the results support the hypothesis that early intervention is beneficial.

"The major hypothesis of this study, however, was that tutoring in the home at the ages of one to two years for one hour a day is even more beneficial than initiating intervention at the ages of four and five. Although the 7-point difference in IQ reported here between the experimental and control groups was statistically significant, the conclusion that one hour a day of tutoring is warranted seems dubious in light of the fact that the experimental group and the Karnes preschool group (who did not have home training at age two) made greater increases in IQ when entering the Ameliorative preschool at the age of three. The hypothesis, then, that home training for one hour a day before the age of three is more beneficial than training at a later age would appear to be negated. As indicated, better results were obtained by placing children at age three for one-half day in a specialized preschool with a ratio of one teacher to five children.

"It should be pointed out, however, that this experiment does not exclude the possibility of obtaining marked improvement in children when intervention is initiated in the home at the age of one and two, if the intervention consists of a program in the home that includes more than one hour of tutoring plus a program of parent training and parent participation. The present writer is convinced that a little intervention is not significantly beneficial, and that if results are to be achieved, the program must be a "total push" program throughout the waking hours of a child over a four- or five-year period (p. 248)."

The third study involved the training of mothers to teach their infants at home. Mothers attended a two-hour meeting once a week over a one-year period and were responsible for implementing an educational program at home. Professional staff made monthly visits to the home where specific help was given the mothers. A toy and book lending library provided instructional materials for the mothers to use. Preliminary data tend to support the effectiveness of this intervention and are in accordance with Kirk's contention that intervention with infants must involve more than tutoring the child one hour daily, and that parent participation is essential.

The answer to the question as to the strategic age for intervention must wait until these children can be followed into the public schools. There is evidence, however, that functioning can be accelerated through intervention programs during the infant and early childhood years.

Implementation of Interventions by Paraprofessionals, Classroom Teachers, and Mothers at Home

The first study to answer the question: Can an effective educational intervention be implemented by mothers at home and paraprofessional classroom teachers? was a pilot study conducted with mothers whose children were not enrolled in a preschool program. The mothers of the experimental children attended eleven weekly two-hour meetings. At the beginning of each session the mothers made educational materials to use during the following week in teaching their children at home. Inexpensive materials or items commonly found in the home were incorporated into these activities. The teachers taught the mothers appropriate songs and finger plays and distributed copies of the words as a teaching aid at home. In addition, books and puzzles were available on a lending-library basis. Generally, materials were chosen to stress useful vocabulary, basic manipulative skills, and math readiness concepts. Language development was the major emphasis of all activities which were designed to teach the child the words he needs to label the objects in his immediate environment, to make more presice verbal observations, to generalize, to use grammatically correct forms, to understand and to ask questions, and to formulate answers.

When a mother was absent, the other mothers made the materials for her and the teacher delivered these and the instructions for their use to the home the following week. In addition, the teacher visited each home at two-week intervals to become acquainted with the child, to demonstrate teaching techniques, to evaluate the appropriateness of the activities by observing mother and child at work, and to assess the extent to which mothers were working with their children.

Experimental subjects evidenced significant gains in intellectual functioning as measured by the Stanford-Binet Intelligence scale. The mean gain of the experimental group was 7 points, while the control group remained unchanged. The ITPA gains of the experimental group exceeded those of the control group by two to eight months on seven of the nine subtests. On eight of the nine subtests the gains of the experimental group were at least twice the program interval of approximately three months.

The results of the previously discussed study on training mothers of infants also confirms the hypothesis that mothers can be trained to effectively implement a preschool program at home.

Another study was designed to determine whether a paraprofessional teaching staff indigenous to the poverty area could, through sustained inservice training and daily supervision, implement the highly specific instructional program developed in the Ameliorative preschool. Intervention effectiveness was evaluated by comparing the performance on a standardized test battery of children taught by paraprofessionals with that of children taught by professional staff implementing the same instructional program. One class was staffed by three, young, Negro mothers who had no previous teaching experience and no formal education beyond high school. Another was taught by sixteen- and seventeen-year-old girls enrolled in a high school work-study program. In addition, a qualified preschool teacher served as the paraprofessional trainer in each of the latter two classes. This study, then, goes beyond the feasibility of employing paraprofessional staff in peripheral positions and addresses itself to the question of whether such staff can be trained to assume the major responsibilities for implementing a preschool instructional program.

The staff variables explored in this study (professional, adult paraprofessional, and teenage paraprofessional) did not produce significantly differential performances on any component of the evaluation battery. The results of this study clearly endorse the feasibility of alleviating preschool staffing problems through employing paraprofessional teachers who receive sustained inservice training and daily supervision. The paraprofessionals, adult and teenage, who participated in this study did indeed demonstrate the ability to implement the highly specific instructional program developed in the Ameliorative preschool as effectively as professionally trained teachers.

It might have been assumed that implementing a highly structured instructional program would make the training of paraprofessional staff even more arduous. This did not prove to be the case. The supervisor of the adult paraprofessionals felt that the choice of the Ameliorative curriculum may have been critical to the success of the program. Structured programming proved to be a rather ideal vehicle for training paraprofessionals: (1) The paraprofessional teacher approached her teaching with confidence since she knew precisely what she was to do. (2) She was able to evaluate immediately her effectiveness as a teacher by observing the child's performance on defined tasks. (3) She could see the specific results of her efforts in the day-to-day development of the children. Although these observations were required to implement the structured curriculum, they also served to reward teaching efforts by emphasizing child growth.

These studies clearly support the use of paraprofessionals supervised by professional staff as teachers in the classroom without fear of jeopardizing the learning of children. Mothers of the disadvantaged clearly demonstrated their ability to stimulate the intellectual functioning and language development of their young children. The findings of these studies strongly suggest that teacher training programs should prepare teachers to fill a new role, that of supervisor of paraprofessional teachers and trainers of mothers.

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FIGURE I

DIFFERENCE SCORE MEANS FOR THE THREE ITPA SUBTESTS
IN WHICH THE FIVE GROUPS DEMONSTRATED THE GREATEST INITIAL DEFICIT

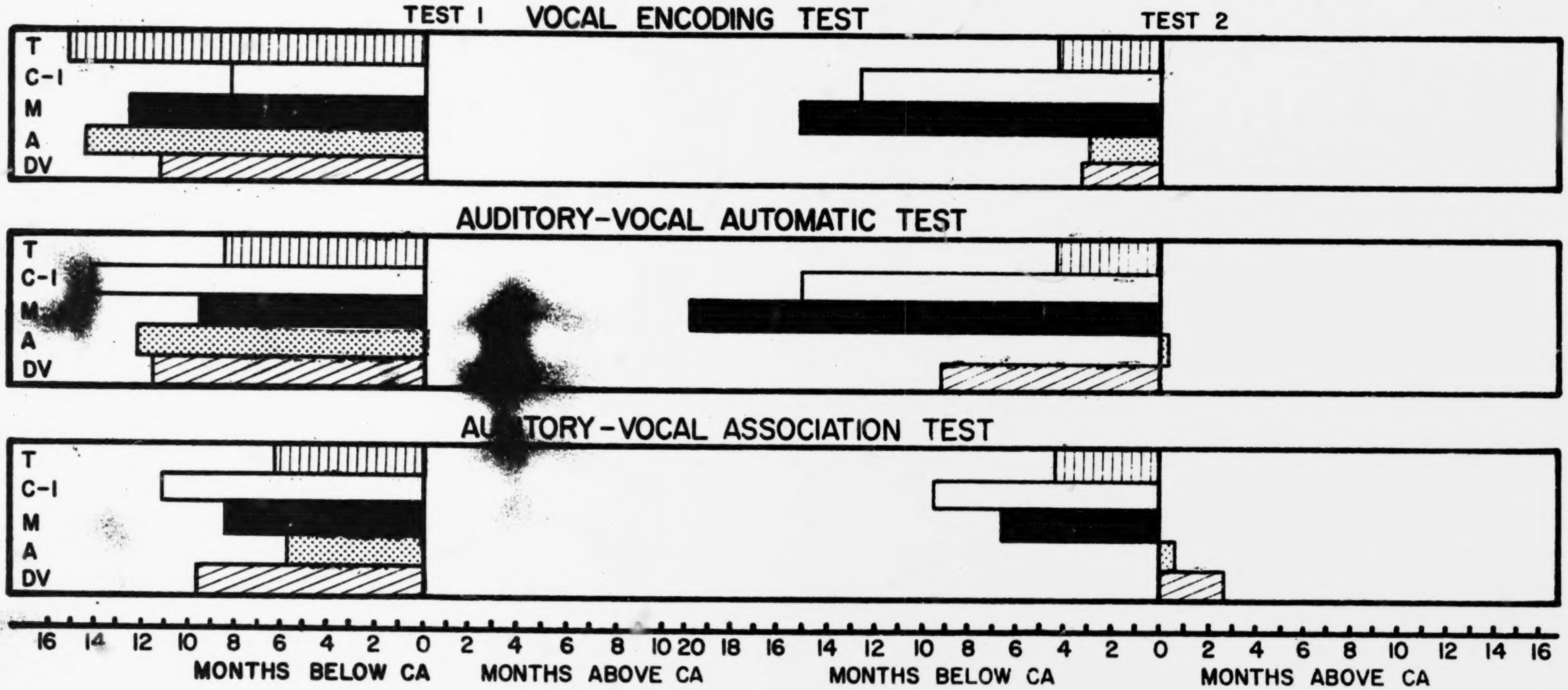
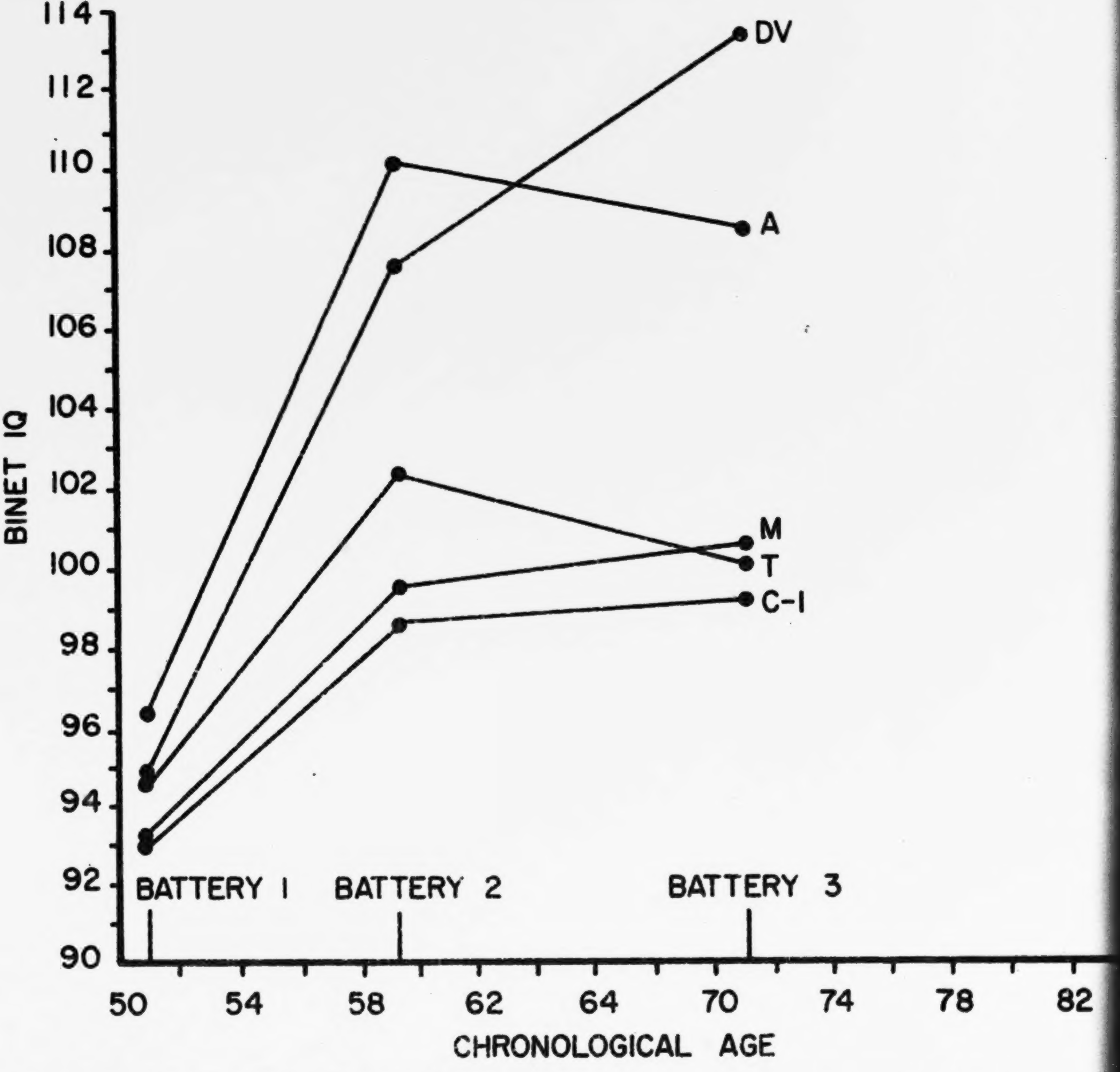


FIGURE 2

STANFORD BINET IQ
FIVE GROUPS FOR TWO YEARS



NOTE: THE TIMES OF THE THREE BATTERIES WERE PLOTTED AT THE MEAN BINET CHRONOLOGICAL AGE OF THE THREE GROUPS.

FIGURE 3

ITPA TOTAL DIFFERENCE SCORE MEANS
FIVE GROUPS FOR TWO YEARS

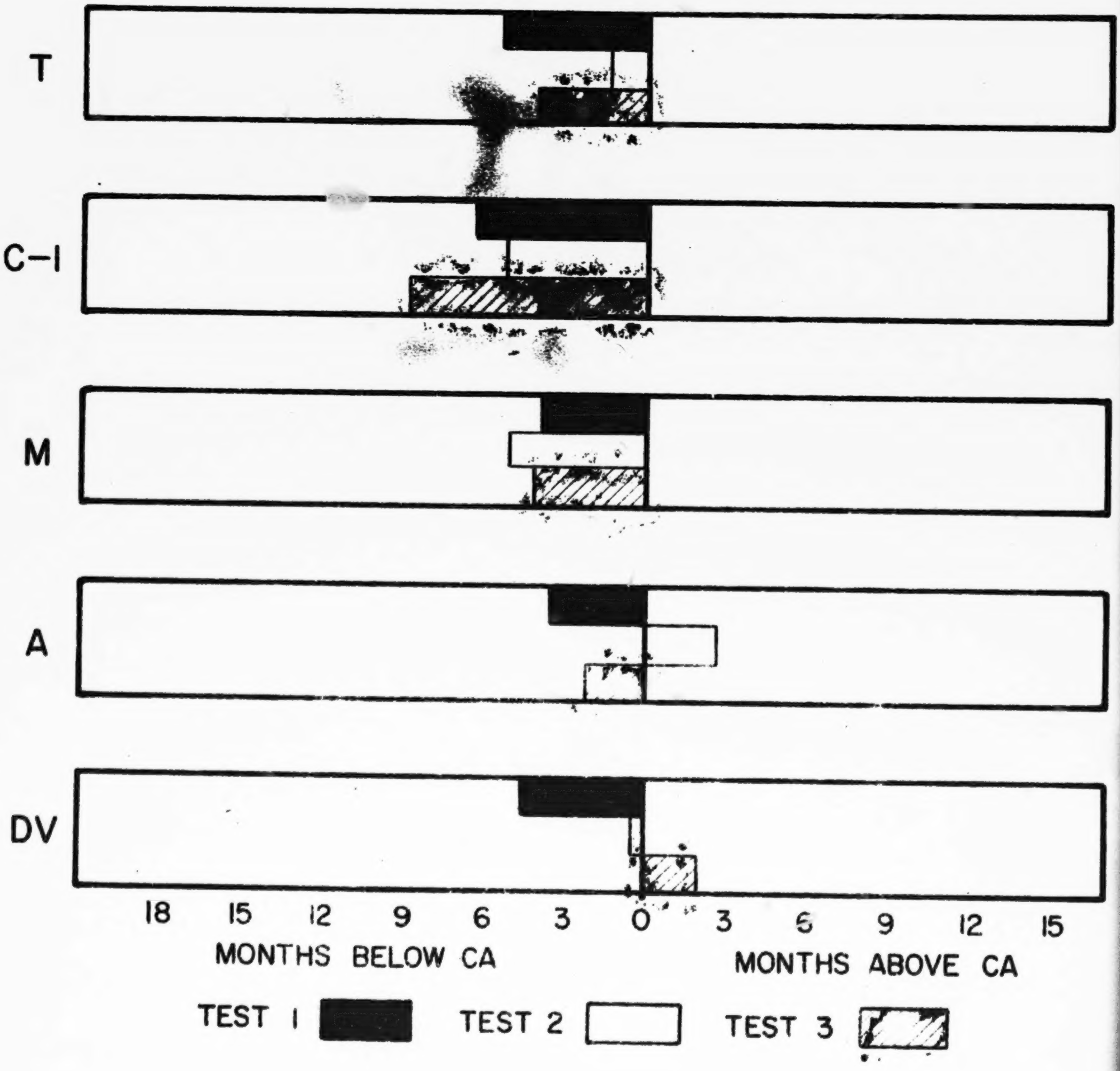
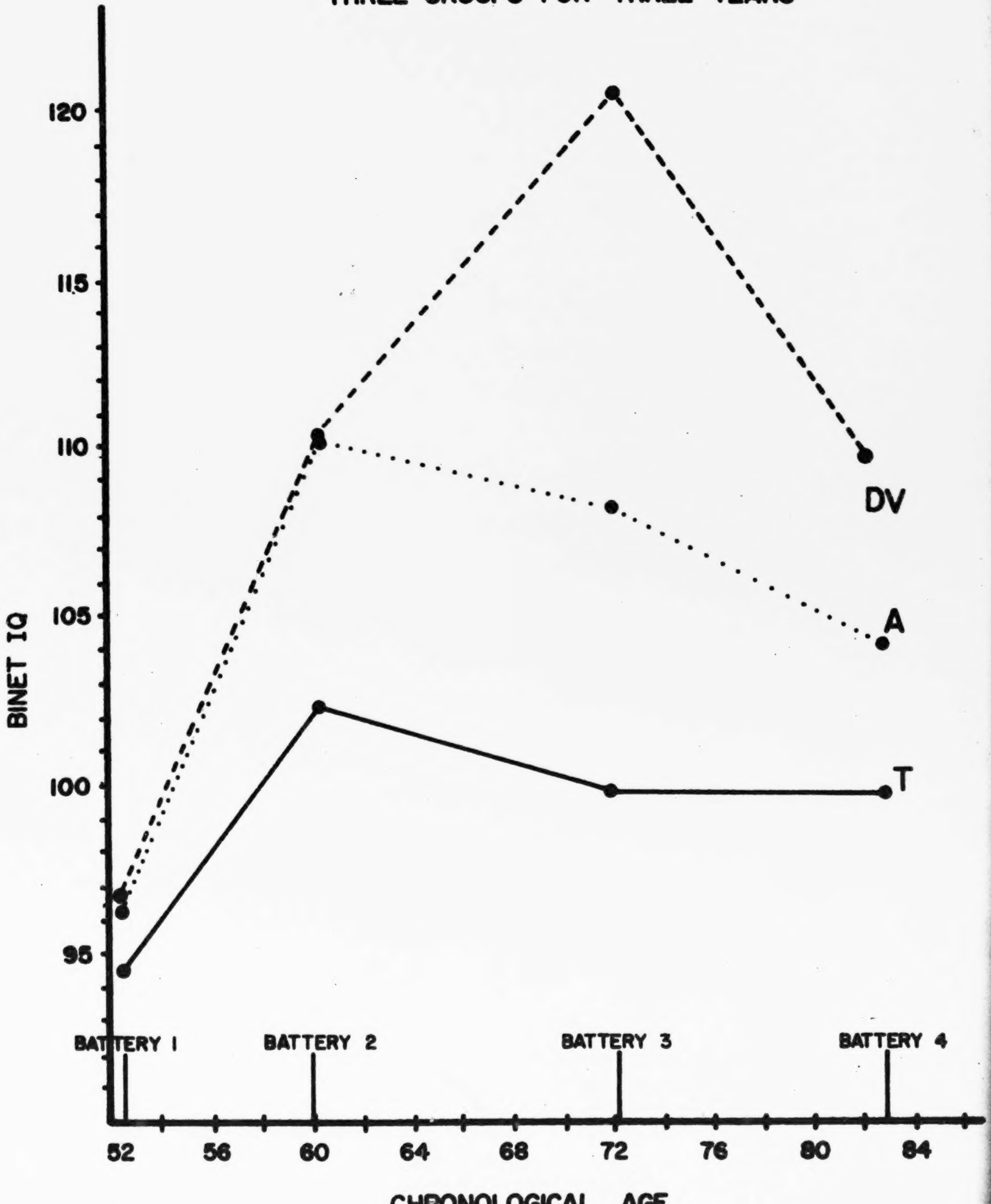


FIGURE 4

BINET IQ
THREE GROUPS FOR THREE YEARS



NOTE : THE TIMES OF THE FOUR BATTERIES ARE PLOTTED AT THE MEAN BINET CHRONOLOGICAL AGE OF THE THREE GROUPS.

AN AMELIORATIVE INTERVENTION PROGRAM FOR YOUNG DISADVANTAGED CHILDREN

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An ameliorative program with disadvantaged preschool children was developed over the last four years by Karnes and her associates at the University of Illinois (Karnes, Hodgins, and Teska, 1969). This approach represents the middle of the road so far as preschool program for the disadvantaged is concerned. It is more structured than the British Infant School or the traditional nursery school program but, on the other hand, it is less structured than the controversial Bereiter-Englemann approach.

The Karnes preschool program is designed to ameliorate those deficits associated with living in the milieu of poverty. A review of initial data on several hundred disadvantaged preschool children who have been provided with this ameliorative program has revealed that the major deficits of these children are:

1. Inadequate language development as evidenced by limited vocabulary and tendency to respond in gestures, single words, or disconntected phrases. These children had not acquired the language patterns typical of more advantaged preschool children.

2. Inadequate skills in processing information as indicated by limited ability to ask questions, to discriminate, to classify, to see sequential relationships, to make inferences, to draw conclusions, and to transfer learning. Poor listening skills and short attention spans further limited their information processing skills.

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3. Inadequate self concept as manifested by a hesitancy to participate in group activities, a withdrawal from unfamiliar situations, and a reluctance to try new tasks.

4. Inadequate social and emotional adjustment as noted in hostile and aggressive behavior or extreme withdrawal.

5. Inadequate motivation to pursue learnings essential for subsequent academic progress as shown by an initial lack of interest in books, in other educational activities, and in obtaining and organizing information.

The homes of these children are characterized by:

1. Crowded living conditions. Generally too many persons occupy too few rooms. This condition discourages verbal interaction and individualized attention from adults. The child often protects himself from extraneous noises and confusion by not attending, but later good listening skills will be demanded of him.

2. Broken and/or disorganized homes, resulting in lack of adequate supervision of children. Such conditions promote insecurity in the child and deprive him of the consistent handling and intellectual stimulation that is conducive to growth.

3. Poor language model. The parents themselves do not present their child with an adequate language model; therefore, the child is poorly equipped to cope with the language expectations of the school. In addition, the child tends to be talked "to" instead of "with." Sharing ideas and experiences is not encouraged.

4. Meager intellectual stimulation. While these parents seem to recognize that it is important for children to get an education, they do not seem to understand what they can do in the home to prepare the child for school. Crayons, children's books, and educational toys are not found in these homes. The parents do not have the "know how" to use inexpensive and common household items to

intellectually stimulate the child. Neither do they seem to see the value of helping the child profit from such simple experiences as a trip with the mother to the grocery store. Instead of providing rewards or reinforcement for types of behavior that teachers would view as necessary for social success, these parents ignore signs of intellectual curiosity.

While it was recognized that all of these characteristics or home conditions do not apply to every disadvantaged preschool child, knowledge of what disadvantaged children in general are like coupled with results of a battery of tests on individual children enabled the researchers to develop a curriculum that could be individualized to ameliorate the deficits of disadvantaged preschool children.

In the ameliorative program, manipulative and multisensory materials are chosen to provide the framework for eliciting the verbal responses necessary for language development which is considered to be a critical area of deficit for disadvantaged children. The basic concepts to be taught as well as the specific learning tasks are chosen because their mastery is requisite to successful academic performance in early elementary school. Content to be learned is presented in a game format which employs manipulative materials but is structured by the teacher to require concurrent verbal responses. Teachers are instructued to accommodate their teaching strategy to the performance of the children on pretests and to incorporate into their lesson plans the various facets of the language process embodied in the Illinois Test of Psycholinguistic Abilities.

Each class unit (N=15) is divided into three groups on the basis of Binet IQ with one teacher for each group. Groupings are flexible, however, so that children who need extra supervision or instruction can be somewhat evenly distributed or children who do not perform according to test indications might be more appropriately placed. The daily schedule is divided into three 20-minute structured learning periods: math concepts, language arts and reading readiness, and science-social studies. A large room where the 15 children can gather for group activities is available; however, most of the instruction takes place in relatively small cubicles off the main room. Each cubicle contains materials appropriate to one of the three content areas, and each teacher moves from one cubicle to another with her group of five children.

Since the teacher-child relationship is of primary importance in securing motivation and in providing opportunities for the reinforcement of learning, each group remains with the same teacher for the three structured learning periods, for juice, and for field trips. The low pupil-teacher ratio allows for differentiation of instruction to provide a high success ratio for each child. Immediate correction of incorrect responses (often through the repetition of model sentences or through duplicate layouts of small manipulative materials) and reinforcement of appropriate responses (usually through praise) assures the children of their competencies in handling curricular requirements and enhances their intrinsic motivation to learn. Frequent review extends content previously presented and provides opportunities to use further the vocabulary and sentence structures which have been taught.

The structure of the program predicates active involvement of teacher and child. Through manipulative experience, the child moves to physical mastery of a concept and is required by the teacher to make appropriate verbalizations. Moving from structured, physical involvement within a meaningful, productive context to independent, conceptual verbalizations is appropriate to intellectual development. The teacher monitors the child's manipulative performances and assesses the adequacy of his verbal responses so that she can alter the learning situation appropriately. It is the function of the teacher to provide sufficient repetition to establish new verbal responses and to alter the learning task to encompass further cognitive and verbal complexities.

Children are free to form their own peer groupings during the music period and during a brief period of directed play which stresses visual-motor activities such as puzzles, blocks, clay, nesting and stacking toys, and pounding sets. Concepts taught during the structured periods are reinforced during directed play and especially during the music period. For example, when body parts are introduced in science or counting in math, these concepts are stressed in songs and rhythmic activities during music.

The general goals of the social studies and science curriculum are to teach useful vocabulary, to develop skills of classification, to provide simple experiences in developing sensory discriminations, and in observing natural phenomena. The curriculum begins with a unit on body awareness and self-concept development through the use of body exercises, songs, pre-cut unassembled figures, and body outlines of the children. A unit on family members and immediate home environment follows which uses integrated pictures, rubber play people, and family puppets; clothing cut from catalogs and sorted according to body parts, family member, or season; furniture items cut from catalogs and sorted according to type or appropriate room; go-together pictures such as a hand and a mitten, a chair and a table. A kitchen science unit, through the demonstration of simple scientific principles, provides opportunities for careful observation and verbalization of what had been seen, heard, tasted, or touched. Basic vocabulary include *melt*, *boil*, and *freeze*; *dry* and *wet*; relative temperature words such as *cool*, *warm*, and *hot*; *dissolve*; taste words such as *sweet*, *sour*, and *salty*. Additional units in this curriculum are germination of seeds and plant growth, farm and wild animals, fruits, vegetables, community buildings and workers, vehicles, weather, seasons, and time sense.

Objectives of the math curriculum involve the development of basic number concepts, appropriate manipulative skills, and a useful vocabulary. The general areas include the identification of five geometric shapes; one-to-one matching and its relationship to copying patterns, matching quantity, and establishing sets and verifying their equivalency; dimensional terms and seriation; counting as a functional concept; the introduction of numerals as visual symbols; and beginning addition and subtraction with manipulative objects such as popsicle sticks, bottle caps, and peg boards.

Multiple copies of inexpensive books are the most important instructional material in the language arts and reading readiness curriculum. As the teacher reads, each child holds his own copy of the book; he learns to hold the book right-side-up, to turn the pages singly and in sequence, to associate the pictures with the story being read, to develop left-to-right progression, and to associate the printed symbol with meaning. In addition, the small group story-time provides opportunities for reinforcing and elaborating upon vocabulary previously taught; for both short- and long-range memory activities; for sequencing events to show cause and effect and time relationships; for making inferences and divergent responses. Finally, as the story is read, the child hears acceptable syntactical models and the familiar constructs of the language. He absorbs the rhythms and stresses of standard, informal English. This curriculum also includes activities which develop visual-motor coordination and which emphasize the rather fine visual and auditory discriminations requisite for reading readiness.

Language development receives major emphasis throughout the day and especially during the three structured periods. Verbalizations in conjunction with the manipulation of concrete materials are considered to be the most effective means of establishing new language responses. The game format (card packs, lotto games, models and miniatures, sorting, matching, and classifying games) creates situations where verbal responses can be made repeatedly in a productive, meaningful context without resorting to rote repetition; often the child can visually and motorically assess the correctness of his thinking before he makes an appropriate verbalization. If the child is unable to make a verbal response, the teacher supplies an appropriate model; when he begins to initiate such responses, the teacher has the opportunity to correct, modify, and expand his verbalizations.

Follow-up data obtained from standardized tests on children who have been provided with this ameliorative program during the preschool years and are now in the public schools indicate that this program is a viable program which accelerates intellectual functioning and language development and enables the children to cope with academic expectations of the public schools. At the completion of the first grade the children from the ameliorative program were a half year above grade placement level in reading and at grade placement level in arithmetic.

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Disadvantaged Mexican American Children and Special Education

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There is a line in Shaw's Pygmalion where Eliza Doolittle says, "The difference between a lady and a flower girl is not how she behaves, but how she's treated." Everything I will say on the relation of special education and the Mexican American is related to that thought. So I want to begin by making a couple of observations which, I believe, will establish a reference point from which my remarks can be interpreted.

First, that none of us are quite sure what the term "disadvantaged" really means. About the closest that many of us can come to giving it some consistent interpretation is that it means not being prepared for immediate visible success in our public school system. For purposes of common understanding let's use that definition. The attempts to identify the causes of this relationship to "disadvantaged" and failure in school are as numerous as the stars. And so are the causes.

The most common causes attributed to the lack of educational success in the public schools for the Mexican American are language and culture--with heavy emphasis on language. Dr. Herschel Manuel in his Spanish-Speaking Children of the Southwest: Their Education and the Public Welfare says, "... More Spanish-speaking children than English-speaking children come from "culturally disadvantaged" homes, more of them have little or no knowledge of the language of the school when they enroll; more of them must continue their education in a language different from their home language; more of them lack background of experience and incentive favoring high educational achievement." And Dr. George Sanchez in a chapter called "History, Culture, and Education" in the book La Raza, Forgotten Americans, says, "...The fact that his state of socio-economic disadvantage is usually accompanied by a lack of knowledge of the English language is nearly always interpreted as 'language handicap' or 'bilingualism.' As a consequence of this confusion, the school addresses itself to a fruitless hunt into the mysteries of the deleterious effects of being unable to speak English, instead of adapting its program to the requirements of children who are disadvantaged socio-economically."

These observations by two prominent Mexican Americans devoting their professional skills to a dedicated search for ways of raising the lot of their people tend to say that with the possible exception of language, the Mexican American has the same factors of "disadvantageness" as any other individual. I think far too many school people have followed this line of reasoning and the results have been tragic for the Mexican American. Let's see if we can more clearly define the role ot the school, and its Mexican American constituency.

Let's take a positive position that the Mexican American youngster comes to school with a richness of assets not possessed by many of his "disadvantaged" brothers. He has a head start on becoming a bilingual individual early in his life. And what does the school do with these assets? They take them and turn them into instruments that are used to consign this youngster to "special" education classes. And far too often the purpose of that class is to eradicate his "disadvantages" of language and culture. This process in itself directly violates the basic principle for so long inviolable in our educational process--that you take the child from where he is. So to a great extent when you look at special education programs for Mexican Americans, you are looking at an effort to take a child and acculturate him for potential assimilation later on. The result has been, to a great extent, educational genocide for the Mexican American. But even more devastating is the impact such an approach has on the institution of public education.

It focuses a harsh light on what many of us have known and been saying for a long time, that the school is a "disadvantaged institution." It can only educate those whose mold fits its curriculum. And its curriculum is designed by those whom is has successfully served. So you see, if you talk about "disadvantaged children" you are talking about those who, in essence, are inferior and not a great deal can be expected of them. This leads to a self-fulfilling prophecy where children are put into "disadvantaged" ie "inferior" programs. This is the treatment Eliza Doolittle talks about. This is the "disadvantaged" learning environment the school provides for bilingual, bicultural children.

If, on the other hand, we focus on "disadvantaged institutions" this implies acceptance of responsibility for inadequate institutions of "institutional deprivation." A kid who doesn't learn to read by 5 or 6 may later learn to read, but if he is taught that he is disadvantaged, ie, inferior" at 5 or 6, he may never overcome it. What I am waying is not that we need new institutions--disadvantaged as they may be--but that we need people who are willing to accept responsibility for the consequences of their work; if necessary fighting for the resources needed to get the job done. These are "moral" traits which an expert may or may not possess. High morale, which is one of the characteristics of an effective institutionm is related to "value infusion" and "pride." Few effective institutions consider their participants "disadvantaged." So what I am saying is let's get rid of this "disadvantaged child" syndrome. It burns me when I think of the thousands of Mexican American youngsters who have been tabbed "disadvantaged" because they came to school possessing all the assets necessary to become bilingual, bicultural citizens.

But aside from the area of "disadvantaged: concepts and the school is the real concern on the relation of the Mexican American to special education programs. Obviously, the initial problem is one of identification. Whatever the process--testing, teacher recommendations, psychiatric input, etc.--far too often the determiniation of placement in the class is based on criteria not related to ability to perform, Dr. Jane Mercer of the University of California at Riverside, in a report given at the Inaugural-Peabody-NIMH Conference on Socio-Cultural Aspects of Mental Retardation at Nashville, Tenn., June, 1968, identifies seven stages of labelling a child for a mental retardation special education program in California and points out, "...We have found that, at every stage in the labelling process, a child of Spanish surnamed is exposed to a higher probability of going onto the next stage in the process than an English speaking Caucasian child or a Negro child. Those children most likely to complete the sequence are those who have many academic problems, come from homes where little English is spoken, and have difficulty communicating in English."

As a corollary to Dr. Mercer's findings is the law suit instituted last year by parents of Mexican American youngsters in Orange County, California aimed at an identification process for special education classes in a particular school district. The suit pointed out that more than 50% of the students in special education classes in the district were Mexican American out of a total Mexican American student population of less than 10%. It raised some points related to the process for identification and placement--again primarily in the type of tests used and their interpretation. The Los Angeles City School Board declared a moratorium on the use of tests that have obvious language and culture bias when used for determination of intelligence potential or achievement level for bilingual, bicultural students.

A recent publication of the Southwest Educational Development Corporation in Austin, Disadvantaged Mexican American Children and Early Childhood Education, devotes a sizable amount of space to this problem of determination of the intelligence and learning potential of the bilingual, bicultural child. I recommend you get a copy--they can be obtained from the Office for Spanish Speaking American Affairs, Department of Health, Education, and Welfare, 400 Maryland Avenue, SW.--Room 2017, Washington, D. C. 20202.

Several major points have been established in attempting to resolve the difficulty of securing valid information for placement of Mexican Americans by a testing process. Translation alone will not achieve validity since the cultural factors remain alien to the student. Dr. Manuel of the University of Texas at Austin points out if the child knows only Spanish, the obvious procedure is to test him in Spanish. He feels, however, that when the Spanish-speaking child enters the English-speaking school that the situation changes rapidly, and that by the second grade the children will do about as well on a group test of general ability when the directions are given in English as when the directions are given in Spanish. He also feels that school achievement can be tested best in the language in which learning has occurred. His most improtant point in, however, that any "unfairness" of a test is more likely to be in the interpretation than in the test itself.

I would like to add that his observation on testing the youngster in the language in which the learning occurs is wholly compatable with my long held belief that bilingual education programs must be instituted in every facet of the school program, Thus, the Mexican American youngster properly assigned to the special education class must be afforded the opportunity to learn in his mother tongue--Spanish--while he is learning English. And that at no time should the school suggest in any manner that his mother tongue--Spanish--is an inferior or second tongue. This is not to say that he must not, by all means, achieve communication competently in English. One thing this does suggest is that the school needs to look at the development of a program in which special teachers--bilingual, bicultrual--can be more important than special classes when serving. On this basis, the bilingual, bicultural youngster as he becomes increasingly socialized would be expected to improve in the English-speaking classroom.

At the present time there does not seem to be a completely valid and reliable testing instrument to use in identification of the bilingual, bicultural youngster for accurate placement in school programs. Particularly the use of existing instruments produce great errors when related to the culture of the youngster. To a great extent this is do to the failure of the school to produce any viable program in curriculum or instruction that provides cultural cognizancy from the very first day of school. The result is the effect of the Mexican American youngster entering a completely foreign environment the first day he enters school. And in a country where his forefathers preceded his Anglo and Black brothers by more than a Century.

There are other serious implications in placement mistakes. For the youngster this very well may mean a consignment to this level of instruction and treatment for the remainder of his school days. Tragically this is too often the case as pointed out in the report of the U.S. Office of Education, *Improving Educational Opportunities for Mexican American Handicapped Children,* "...Furthermore, once tested and labeled, children are seldom taken out of classes for the retarded."

For the class it may well mean a confused educational situation with a number of youngsters able to perform well above the rest of the class. For the teacher, even with a small class, it may mean difficult and frustrating experiences in developing levels of instructions for a varied learning level and rate.

It seems to me that three ingredients are imperative in the successful operation of a special class for the Mexican American. The first involves the use--and in many cases the development--of materials with a cultural cognizance for the bilingual, bicultural child. This really means get those "Dick and Jane" books out of those classrooms. I do not presume to prescribe for each school environment, but would much rather leave such judgements up to those teachers who must bear the responsibility for the learning program. And that leads to the second requisite--teachers trained and prepared to serve the bilingual bicultural child. At this time such training will probably have to come form in-service activities. But it is tragic to place in a special education class a teacher whose training and preparation may be excellent for teaching mentally retarded youngsters but has no understanding for the bilingual, bicultural child. And here I want to stress the need for a cultural awareness or cognizancy. I stress this because it has been my experience that teachers confronted with the challenge of bilingual, bicultural children become involved in pity and a program of love and fail to emphasize learning. We need teachers with compassion, but even more we need teachers who understand the child and recognize that the most important asset the youngster can be given is learning.

Another point of Dr. Manuel which bears comment is that of interpretation of available tests. One area that this immediately suggests is the use of Mexican Americans in this interpretation. Until we are able to develop tests that can validly and reliable predict potential learning capacity of bilingual, bicultural youngsters, we better be prepared to use the cultural and linguistic insight of those who possess these valuable assets. One of the important impacts of this approach is that difference does not necessarily mean mental retardation.

A little known but significant publication by the U.S. Office of Education, Improving Educational Opportunities for Mexican American Handicapped Children points out, "...In studying literacy in the State, the Texas Education Agency pointed out that although the rate of illiteracy is high among all Mexican Americans (more than 20% in the counties in the southwest portion of the State which have the highest concentration of Mexican American population) it is particularly high among children of Mexican born parents. These figures may conceal mental retardation, and may also permit illiteracy to be labelled as "mental retardation." The two problems need to be separated, since one may be corrected and the other ameliorated, but better evaluation techniques must be developed to do this." I would suggest that this situation is even today much more common than most of us would care to admit.

Obviously another way of overcoming the problems of an invalid interpretation is to construct tests in such a manner that they give truly comparable results whether delivered in English or Spanish. Dr. Manuel and his colleagues have been working on this approach. Their tests have three criteria in mind: (1) selection of materials common to the cultures of the

Spanish speaking and the English speaking peoples of the Western Hemisphere, but not necessarily of the same frequency within cultures; (2) use of same pictures, drawings, and numbers in the non-language parts of the text booklets; (3) use of the same directions and same verbal content expressed for one edition in standard English and for the other in standard Spanish of similar difficulty. One of the major problems with these tests in terms of extensive use is the absence of any national norms.

Dr. M. R. Stanford urges another look at tests and their improper interpretations. He suggests that it may be more accurate to say that what is being measured by intelligence tests when applied to Mexican American children is their "operational" level in an English-speaking society at a given point in time. Therefore, he would not discard intelligence tests when they fail to work with Spanish-speaking children, but would encourage teachers to view them as flexible indicators of expected operational level at a given time rather than established mental ability.

For most schools, the absence of a bilingual, bicultural, teacher will require recruitment and training of a bilingual, bicultural teacher aid. Again I want to stress bicultural. It is not enough to find a person with the language ability, there must be the cultural communication present. For the Mexican American child the buffeting of an alien environment can be totally destructive for him as far as education is concerned if he cannot relate in some manner his cultural heritage to his educational experiences.

There are three common characteristics of most special education programs that are vital for the Mexican American. The first is the opportunity afforded by small classes for the teacher to become intimately involved with the Mexican American community. This is extremely important since many Mexican American families do not become involved in the traditional way with the school.. And this involvement by the special education teacher can provide a pattern and opportunity for the entire school to its bilingual, bicultural constituency. I urge that special education teachers be given the responsibility for leadership in the school's community relations program.

The second area is that of individual instruction. Every child should receive as an educational birthright, individual instruction. Bur, for many reasons, this does not happen. For the Mexican American child trying to bridge two cultures, seeking an identity for himself as he fights cultural conflict, this type of instruction is imperative. Again the special education teacher can play a role for the entire school in demonstrating the value of such instruction for the bilingual, bicultural child.

The third aspect is that of worht of hte individual. This, obviously, is closely tied to community relations and individual instruction. The child caught between two cultures must have an even more clear assurance that he is of significant value to himself, to his community--and for the Mexican American this means the very important extended family--and to the greater society in which he must function. I point this out because it is so easy to assume that an American child will, with usual educational and socio-economic experiences, be able to establish an identity that will reinforce him against the pressures of society. It is interesting to note that this business of identity--for so long a serious problem for the Brown and the Black--is now becoming equally serious for the Anglo suburban child. I suspect this development is a reliable indicator that our institution of education has some serious defects.

We are moving briskly toward the creation of a society in our American

Democracy that embraces the worth of human diversity--diversity in language, traditions, culture, economic and political philosophies, racial heritage--education for the 70's must include community involvement, individual instruction and emphasis on the worth of the individual if it is to remain a viable institution. For education to serve its most challenging client, the Brown, the Black and the poor White, it must listen to Eliza Doolittle, "The difference is not how she behaves, but how she's treated." Gracias.

The Disadvantaged Migrant Student and Remediation Through Vocational Education

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STATEMENT OF THE PROBLEM

My State along with many other school districts is faced with the problem of identification of disadvantaged migrant persons and the development of appropriate programs for these students. The serious mistake of orienting our curriculum primarily towards the college-bound student has been made: therefore, very little emphasis has been placed on the non college-bound student or migrant, thus resulting in many disadvantaged persons in the community.

DILEMMA OF THE PROBLEM

In today's complexed society the failure to provide adequate education for the non-college bound student has brought about drastic situations. Many persons are at a state of confusion and unrest because schools have failed to provide the quality of education needed by the total community.

WHY THIS PROBLEM WAS CHOSEN

With the unrest among the people of the surrounding communities, especially the urban areas, and the uncertain results of our present educational programs, it is about time that th~~e~~i~~r~~s business of comprehensive education be taken seriously by the school administrators, teachers, school board officials, and members of the community. For I'm also concerned about the people that have jobs and what happens to them; because, once they have that job maybe they have some additional job training, maybe they learn their skills from a job training program. It's a cinch they're also involved in some kind of upgrading. It may be promotional something of that sort. We're talking about retraining nowadays aren't we? It isn't in the future, it's here right now. We've got jobs that are leaving and no longer in existence. Jobs as recently as ten years new; today gone. I'm concerned with the migrants who have left or will leave the streams and bring their children with them. The future ahead we know what's happening we're going to have to train and retrain and create new types of jobs and that type of thing in the very near future. All right that's a concern of mine. I'm concerned about the disadvantages and I'm saying the disadvantages of these types of categories where you talk about those who are disadvantaged sociologically and economically and culturally and academically and intellectually and physically. All the different types of disadvantages. As I was saying to a couple of people the other day, the person who is of an advantageous community can be disadvantaged too. This isn't something that is exclusive to certain groups of people. Just for what it stands, this is what was given to me the other day by somebody. "Sit those cats down and talk to them. Get to know what's going on. Tell those cats, dig us. Everybody ain't born with AN I.Q. cause the more they learn their I.Q.'s go up. That's a pretty shrewd observation when you stop and think about it. That was from a disadvantaged person. I'm talking about disadvantaged in terms of being hard to reach and hard to teach.

Both kinds. We're talking about the disadvantaged and the fact that sometimes they have attitudes that actually show, if you look they've got no confidence. It's no confidence in themselves and no confidence in the establishment. Indifference, defeatism, hypersensitivity, recognize it, it's true, suspicion even hostility, these are real things that happen. I'm suggesting that perhaps the disadvantaged need recognition as capable human beings, because they are! I'm suggesting they need dignity, they need an understanding of themselves, they need an understanding of others. They need tolerance from others and they need tolerance to others. These are needs!

You want to look at it another way; we have to as individuals recognize that we have to respect the disadvantaged in their capacity as human beings. In their ability to learn as others learn, in their ability to perform, by the same token to learn as others learn, in their ability to perform by the same standards that others are rated by; now that's important, in the same sense and in their ability to hold the same jobs that others hold. I have a feeling in terms of the way that some of us perhaps have been guilty of operating in the past, that we had fully alibied non-education; I am saying don't alibi non-education. The reason is that we have had some casualties, they'll result from the very best intentions of some of us. That's exactly why we don't set these double standards, because if you say these people can only do this much, while others do more, oh boy, that's exactly why we don't set these double standards, that's double standards if it has ever been written as such. It's not only a case of double standards, I'm concerned that all of us in the field of education particularly in vocation education and those who work in industry on management levels have to work on these basic fundamentals. That each person must to be accorded complete dignity due him as a human being be allowed an opportunity to make a contribution, it may be small, but it's making a contribution. Having an opportunity to advance and being recognized for progress and contribution is important. Now, all of us like progress and contributions. Now that identification has opened, we have to have it. It's part of the stuff that makes life purpose. I'm suggesting that the physically disadvantaged, heaven knows, we've got legislation on this now, have a number of variations that perhaps we haven't thought about. You talk about those that have special needs in terms of being handicapped, that is a precise problem whatever it happens to be. They are disadvantaged physically or perhaps that there are four different groups that vocational education, industrial arts as a part of it, must serve.

The first one is the persons in school; large groups, those in school are doing well whose need for occupational preparation are being served. O.K. we're done. Then there's the group that's actually out of school who are employed and whose need for retraining and upgrading are being served. Now there's another group; there's a group of persons in school who are not doing well and/or whose needs for occupational preparation are not being served. And then there's that parallel group, ~~almost~~ a person, out of school who are unemployed or underemployed just as important and whose need for occupational preparation are not being served by regular vocational. The top two, if they are being served and say we continue to serve them, and put some attention on those other two groups that are not being perhaps served the way they should be. Now real quickly if I may ~~must~~ share with you this concern; I can do this I think rather fast and point out a number of things. I'm saying first of all I don't care whether you talk about vocational education, or career education, or occupational education, whatever it is it's preparation for the world of work. If we have to have a new means of doing an inch O.K. then we should be concerned about it and work collectively to solve it. But let's not be too concerned about somebody saying this term when we say it should be another term. I'm suggesting one of the facets for example you put two lines, maybe it doesn't mean too much to you but you add a little bit more to that with a ground level; some stars; some rungs in between and all of a sudden you got a ladder. Now if you were to take that ladder and say what can we do with it; all right, let's do it! This way we'll say down at the base of ground level we've got the large group of unskilled people and they perhaps can enter that labor market limited as it is without any help on our part in education or with little tiny bit and all of a sudden they get up there to a level where they can have an entry level skill of some sort. It's not the best, it's not the most advanced but it's a place where they've got a respectable beginning. They can move up a little bit further and maybe go up to semi-skilled and they can move further and to skilled, they can go to technical, they can go to semi-professional, whatever level you want to put on it and the sky is the limit. There is no reason why they can't go to two year college, it's not job rung oriented, it's people oriented.

All right, let me share just a couple more quickies with you. I honestly believe that every single school boy or girl should leave school or graduate from high school with at least one (1) salable skill. We had three little girls working in our office last summer, who happened to be in the field of business education. They didn't do anything fancy; believe me, you know they didn't have any skills; they never had any skills presented to them. They sampled four hours of school work in the morning to find out a little bit about the program and then worked under a work-study program in the afternoon. At the end of four weeks, I talked to one of them; I asked her, "What did you get out of this?" she replied, "I guess I only learned how to fill those cards." Is that a salable skill? I say it is. It's a simple type of salable skill that in some cases people would pay money to utilize. That's what I mean by a salable skill. I'm saying we have to have more basic employment information.

We have kids that don't know how to fill out employment forms. They don't know what withholding tax is. They don't know the basic economics of life from that stand of point. They don't know how to appear for a job interview. They can't answer anyone in terms of what they can honestly do; they've never taken inventory of their own interests and abilities. We could go on and on each one of these points basic employment information, work study and work experience. I have a concern because I think they belong, they're alike. I think that sometime we have to utilize those types of experiences and tie them into constructional programs that have meaning. I think we have to have more realistic occupational advisement. You can call it vocational counseling if you wish, but people who know what they are doing and what they are talking about can perform much better; but it has to be more realistic than it has in the past. We've got programs all the way across this country that are still being operated today because it always had been operated and then why should we change them? And the fact that it costs money to operate and we aren't doing some other things doesn't even enter into it. Any kind of a decision. I suggest we have to initiate new programs, not depend upon those that closed out but depend upon the need within the community. I'm suggesting that we can perhaps take some plot to this cluster family approach whatever you want to call it where we try and get away from this narrow course definition type of thing. We open up things where we're talking about the whole field of graphic arts or whatever field it happens to be, and make it a real live breathing type of program. And this way you have a chance to actually expose students to a number of different things and not to one narrow field alone. I get a little concerned about this business of time for instance; what's wrong with all year schools. O.K. you say I want a vacation. O.K. don't worry you're going to get a vacation, things will work out that way. What about all the quibble about quarters, semesters and units and all the rest of this. We're living in the past in many times; and I'm concerned about it.

We have to think ahead and look at it. You know somebody will say O.K. yes sir, don't ever dare touch my 50 minute period. Oh, you know that's sacred. Well, did you ever stop to think maybe you might be able to do just as much in 45 minutes and we've got programs that have been checked, evaluated very carefully where teachers claim they can do just as much in 30 minutes? What's more important to have complete exposure to a large number of students or to take relatively few along the present time?

I'm just saying think about it, it's a concern that some people have. We've got some schools that literally are operating on a much different hour basis. They start at 6:30 and 7:00 o'clock in the morning and they run through until 11:00 o'clock at night. More use of facilities, more exposure to a larger group of people. Meaningful programs, apportioned in that context. Mobile, portable classrooms, the only way to go and yet some people don't seem to think there's anything to it. We can't afford in many situations today, particularly in rural school districts, to set up an elaborate facility that costs thousands and thousands of dollars and which cannot be supported by any given number of students in that school. And yet you can transport something into them for a limited period of time, it'll work. And this has been proven and yet some people don't seem to go along with it. What about off campus locations? Lots of school districts are doing that. They are actually going into industry on a Saturday, perhaps we 've done that outour way several times. Using an industrial plant for an example and utilizing a real live work situation show their problems there are problems in all of these and you say we can't do it because at the legal problems. Well, if we do that we're never going to change. We're not going to change a bit.

When I think about flexible facilities where we talk about almost a shell, a room, sure it's a shop, it's whatever you want to call it. It's got natural lighting, it's got artificial lighting, and electric and all the utilities, everything that you want but it's the sort of thing you can set up in a hurry for something and then terminate it when it's need no longer exists and rip it out and the next Monday open it up with something else brought in. That's flexible to me. You're not frozen on equipment on four walls. These are just concerns and I've got another little one here that may begin to sort of sum this up because I think we're concerned all of us about the size of the group - that's business of individualized group instruction.

We're not saying one is right and the other is wrong. They both belong but we have to know how to balance those out in terms of our instructional program choose them wisely and correctly. Media, good heavens we've got enough media to run down our ears, hard wearing and soft wearing everything else but the thing about it to me is that we don't use it the way we should. For years we've said in Industrial Education we use the teaching materials. Oh yes, we do, other people don't. Yet, I defy you to go to most state conventions. I'm sure it doesn't happen in New Jersey or here in Louisiana and somebody will stand up in front of you and he'll talk about what could be illustrated and I guess you're right.

I'm concerned about this. I'm concerned that we don't use field trips and transportation. We can't cart people out. We say we can't afford it. Why let's find the way to afford it. They were to have these things because you say they are fulfilling a need in terms of your program and then you find a way to overcome the obstacles that are there. And then of course I'm talking about advisory committees, not the old rubber stamp type of a thing where everybody comes in, oh yes, this is a good program; oh you want a new machine; oh we can loan you one for a period of time. Now I'm talking a community involved committee where people honestly say what they feel and think and even using students. We've got a couple working up my way and they work and boy when those students get in there and help out our way and they feel they're a pure group with adults all of a sudden they begin to respond as the kind of individual that you hoped they would be. Then of course I'm saying we've got to get on the ball and we've got to plan and initiate and we've got to work towards all of these things. Outline for employment orientation program using slides and 16 millimeter film.

EMPLOYMENT ORIENTATION PROGRAM

First we must set a philosophy. This philosophy should be: Exposure - Training - Evaluation; thus, hoping to provide for a transition. This transition being from school or the existing situation to the world of work. In setting up this philosophy we should define a few objectives. Four of these should be:

1. To teach new skills
2. To teach good work habits
3. To develop positive attitudes toward the job, fellow workers and superiors
4. To instill within the student a sense of value

Now on with the employment orientation program. The student must be told or given a definition of a job. What is a job? I could ask each of you who are present, what is a job? And I would receive a different definition from each of you. A job is merely an exchange of a full day's work for a fair wage. All other definitions - a way of supporting a family, new clothing, new automobiles, trips, etc. would depend upon how smooth this exchange of work for pay is made.

After the student has learned what a job is, he must learn the ways of finding jobs. What are some of these ways? There are for examples, teachers, counselors, newspaper ads, employment agencies (both private and public) business offices or personnel offices of companies, friends and relatives, or seeing help wanted signs posted on the outside of business buildings. These are but a few ways in which persons can find jobs.

Now that we have given a student a definition of a job and have shown them ways of obtaining employment, we need to turn to the more formal aspects of employment. I call this a formal part of gaining employment because I feel very strongly that this is possibly the most important aspect of persons becoming gainfully employed. Yes, this formal, or important part of employment - whatever we might call it, is nothing more than a job application. The job application in most instances is the first impression that an employer gets of an employee. We might call it the getting acquainted correspondence. Remember I have said that every student leaving school should have a salable skill. If the student has a salable skill, then he is like a salesman attempting to sell the most important product in his life - HIMSELF.

Therefore, this application must meet a minimum of three requirements. (a) Neat (b) Complete (c) Truthful

The student must be told to always get two copies of the employment application. One as a working copy, this is the one that he can erase - scratch over - or anything that will assist him in presenting a true picture of himself. The second copy is the final or formal one - or calling card that will enable him to plant a solid foot in the doorway called employment.

Now the second requirement is that of completeness. It is important that each and every space be filled in with the appropriate information. This tells the employer that this prospective employee read and understood each question and that he took the time to prepare.

The third requirement is that of truthfulness. All questions or information asked for, must be answered truthfully. This is most important. The truth will always come to light.

You can plainly see how important neatness, completeness and truthfulness can be.

I have been told by personnel managers and others in the personnel field that in a great number of instances, as many as forty to fifty percent of their applicants never get to an interview.

Next comes the interview. The student shown and taught how to prepare for the interview. He must know something about the company that he is seeking employment - what type of business it is, some of its policies and so forth. He needs to know how to dress, what to talk about, the importance of being on time for the interview and other tips pertaining to the interview, such as courtesy, tactfulness, and understanding of other people's ideals.

Just to tell the students these points is not enough. The students must be taken through a mock interview using a real honest to goodness personnel manager. The use of this real personnel manager does two things. Number one, it is realism to the training. It eliminates role playing by the teacher and second, it is a leading step toward community involvement. By using a personnel manager we are actively involving a member or members of the community in our training programs.

Here is a place where we can use our audio-visual media. For instance these interviews should be recorded on video tape; thus allowing for instant replay. With instant replay thus allowing immediate critiquing and sequence review of this interview. The student is told of his strong points and given suggestions on how he can improve his weak points. These tapes can be stored away for future reference.

After the interview the student should be introduced to time-recording devices; he must be shown the importance of punctuality and the results of tardiness.

It is now time to introduce the student to that salable skill. A realistic skill must be taught and in a laboratory that closely resembles the related working conditions. This is what I mean about realism. The exposed conditions must be realistic.

Along with the skills being presented, related instructions must be given, i.e., safety, attitude building, give non-negotiable checks to familiarize the students with payroll procedure, deductions etc. Then follow this training or exposure with evaluations and job placements. Get the community committedly involved.

CONCLUSION BASED ON DATA

A few educators agree that a serious problem exists resulting from the failure in the identification of the disadvantaged persons and the development of adequate educational programs for these persons. These educators also agree that only through the development of a more realistic occupational educational program, through the maximum use of all existing facilities, and by taking a closer look at our present programs and practices can the solution to the problem ever begin.

ADDITIONAL COMMENTS

In today's complexed and confused society, it is most important that the educationally disadvantaged individual be identified. Positive action must be taken to provide adequate educational programs which will assist these individuals in becoming first-class citizens.

For years, the disadvantaged individual has been a burden on society but, I am convinced that these very same persons can become a part of society rather than a burden. They must become taxpayers and not continue to be welfare patients in order to take their place in today's society. I feel very strongly that it takes education -- education for individuals and not masses of people or just a majority.

Yes, we must build our educational programs on the needs of each individual within our community rather than a tradition.

REMEDIATION AND PRACTICAL APPROACHES TO LEARNING DISABILITIES OF MIGRANT CHILDREN

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As I've thought of this title, "Remediation and Practical Approaches to Learning Disabilities of Migrant Children" and what it actually meant, I then decided to speak to two topics--the second one being "Remediation and Practical Approaches to Teaching Disabilities of Migrant Teachers." I think that we cannot separate the "learner" from the "teacher" and their "disabilities," one from another.

This Spanish saying is most appropriate here: "En boca cerrada no entran moscas." I don't know an equivalent saying in English, but in essence it says "If I don't say anything, you can't criticize." I may enjoy this saying but for your reaction which I feel is the point of this presentation, "I will open my mouth and let the flies in."

I see a common problem in schools in identifying the migrant. For purposes of identifying what make a child migrant, we use three basic criteria. A migrant child is one:

1. who has a parent, guardian, or other person having custody who is classified as a migratory agricultural worker, and

2. who, due to a change in the location of his parents' or guardian's employment, moves from one school district to another in the course of each year, and

3. whose school attendance, during the regular school term is interrupted or curtailed because of this change of residence or who is a temporary resident of a district other than that in which he regularly attends school.

These technical descriptions only serve to identify the migrant child. But who is the child and what do we know about him? We know that the migrant child is distinguished by factors affecting learning such as language, mobility from school to school, poor nutrition and health, prejudice and discrimination, values and cultural differences, poor housing conditions, and lack of relevancy in the curriculum.

Attendance is a major concern, as one example. Children are often in the fields, side by side with parents, working during the school day. Younger children are cared for by older brothers and sisters while parents fulfill commitments to work and to save money for off harvest seasons. A child may fail to come to school two to three days a week and when he does come he's tired, unalert, sleepy, and apparently "disinterested." The teacher has a struggle in deciding whether to work with the child and hope that some spark in his daily activities will make him want to come running into the classroom bright, alert, and interested, keep him busy until he leaves again, or refer him to a remedial teacher for part of the day.

Undoubtedly, many underlying factors can be attributed to factors outside the range of the teacher. We might even, if we rationalize enough, say that the school has no responsibility to the child who doesn't attend school.

I could discuss the value conflicts and language conflicts that I know dismay teachers as well as the child. What do you do? I don't know any quick ready formula for you. I would hope that we as teachers would be more "sensitive" and more available to the child and his family. To communicate. I guess what I'm saying is, if we want to be practical in migrant education, we had better evaluate attitudes and sensitivities of teachers of migrant children. This should be done before teachers have completed student teaching assignments. A continuously planned inservice training program for teachers and administrators that would build a framework of information and build a base of understanding is critically needed. Teachers should also have as an important part of inservice training and workshops techniques and materials on teaching the migrant child.

I haven't discussed the necessity of the teacher aide, or paraprofessional. One teacher wrote some suggestions for teacher aide training in our program and she commented: "Sometimes I feel that the aide is confused with the maid."

Home contact and parental involvement on a regular basis has to be an integral part of the migrant teachers and aides program. An emphasis on adult education on an informal basis is another way of involving parents.

In programs affecting Spanish-speaking migrants, bilingual and English as a second language approaches are a must. In areas where teachers and materials are available, a planned program of utilization of Spanish-speaking teachers and materials should be made.

As a last practical approach to helping migrant children, I feel that teachers in public school programs should not only be aware of the importance of early childhood programs but should also know the educational objectives of such early childhood education programs as Day Care Centers, Parent-Child Centers, Head Start programs, and agencies whose functions affect the migrant child and his family.

In the end, what the teachers know, how she feels and thinks, and what and how she prescribes for migrant children will determine her success with these youngsters.

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BY:
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Environmental Criteria: MR Day Care Facilities (Preschool)

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The topic we have selected to discuss is directly related to a research project we are currently conducting at Texas A&M University. Although our project is focused towards the mentally retarded we feel our results will have broader implications and can be used by all in the field of preschool education. The objective of our research is to develop planning, design and construction guidelines for preschool facilities for use by planners, architects, designers, educators, administrators, and other multi-disciplined professionals.

We do not intend to explore all of the problems, nor to supply all the answers. We desire only to try to stimulate and invite thought and ideas on various problem areas concerning early childhood education. Hopefully this can be accomplished by viewing the concern for preschool education in three distinct and separate parts:

1) Why a Special Environment?
2) What Kind of Special Environment?
3) How Can We Provide This Special Environment?

Why A Special Environment?

The reasons are apparent. First of all:

a) because of the growing public and national concern.
b) because the uniqueness of the problem is directly related to the uniqueness of the population served.
c) "Research shows clearly that the first 4 to 5 years of a child's life is the period of most rapid growth in physical and mental characteristics and of greatest susceptibility to environmental influence. Consequently it is in the early years that deprivations are most dangerous in their effects--Experience indicates that exposure to a wide variety of activities and of social and mental interactions with children and adults greatly enhances a child's ability to learn. Few homes provide enough of these opportunities... The need is for a complement, not an alternative, to family life." (report to U. S. Nat. Educ. Assoc.)

d) The U. S. Dept. of Labor reports that one out of three mothers works outside the home. The number of working mothers has increased more than six fold since 1940 and more than doubled since 1950. In 1964 9 million women were working, 3.5 million of them with children under 6 years of age. About 550,000 were being cared for in licensed day care facilities in 1968. By 1980, some 5.3 million preschool children are predicted to have mothers in the labor force.

What Kind of Special Environment?

Before we attempt to discuss this area, let us try to define what is meant by the word "environment"? This is no easy matter since the word is used by so many diciplines in so many different ways. The first thing we must try to do is qualify its scope and attempt to estimate the variables involved. We often define environment as "all the conditions, circumstances, and influences surrounding and affecting the development of an organism". (Webster)

Relating this to the field of architecture we have qualified its scope to the physical environment only. The variables involved include:

1. people (children, staff, parents, community)
2. program (educational/training and care)
3. physical setting (interior and exterior spaces)

Only two of these variables can be controlled, measured, and evaluated by man. These obviously are: physical setting and program. We will therefore concentrate our energies and attention during this discussion toward these two particular variables. The third uncontrollable influence of the environment, and without doubt the most important is people, the human variable. They will probably almost always remain as the one factor over which man will have very little control.

Programs:

The first thing that comes to mind when considering a program is its general orientation, i.e., total day care, a preschool for moderately retarded children, a Head Start program, an experimental school associated with a university and so on. This, of course, provides the general framework for planning any facility.

At the same time that the nature of the total program is scrutinized, attention should be given to its probable direction of growth.

The second consideration - second only in time, not in importance - are the details of the program which is offered to the children - the curriculum. The classroom needs to be designed to give maximum support to the curriculum and other spaces need to give consideration to producing maximum program effectiveness through planning for the priority of spatial relationships. All this means is planning economically and satisfying human interaction.

Returning to the first consideration - the program and the services it will be performing. In planning for these services, and on the projection of future needs, there are some trends which are discernible and need to be heeded.

1. Rapid expansion in the need for total day care services for all children, with increased recognition of its importance for handicapped children.
2. Lowering of age at which compensatory and preventive education is believed necessary and applicable.
3. Search for new methods of delivering services.
4. Innovations in curriculum.
5. Redefinition of the teachers role and increased use of the paraprofessional in the classroom.
6. Increased use of audio-visual aids.
7. Increased comprehensiveness of services being offered, especially in the care of the culturally deprived and retarded child.
8. Greater community and parental involvement, again especially in the area of retardation and deprivation.

The whole field of day care is in a state of both rapid expansion and change. In other words, buildings now need to be the kind that can not only accept change, but can help plan for and encourage it. The question should be asked, "What is the nature of this service? How can the physical environment contribute to its increasing effectiveness?"

Good educational programs for preschoolers all have the same objective: providing the child with a planned opportunity for experiences which will contribute to his growth now and form a basis for continued future growth. The method used and the short term goals assigned are appropriate to the developmental level of the child and his environmental circumstances.

Good educational programs are as much a part of a total day care program as of a preschool program.

These educational objectives form an educational climate which the architect wishes to carry over into a concrete structure.

In developing our guidelines we have taken the educational objectives with their implementation in curriculum, materials and methods, and are attempting to translate them into a physical setting. We are asking questions such as: How can the physical environment contribute to the achievement of this objective? How can the classroom setting reinforce teaching methods? How can it encourage constructive and pleasant use of supplies and materials? These questions and their subsequent answers are called "concept formations".

In broad outline the teaching objectives for young children involve -

1. Establishment of orderly behavior.
2. Development of a good self image and an accompanying motivation for learning.
3. Language development
4. Physical development - both eye-hand and gross muscle coordination.
5. Mental development through sound early concept formation.
6. Good relations with peers and authority figures.
7. An opportunity for creative development.

Taking the objective: "Improvement of fine and large motor coordination" as an example, the procedure for analyzing the physical environmental implications inherent in this objective goes somewhat as follows:

The activities involved in the improvement of fine motor coordination are centered about the use of pencils, crayons, scissors, eating utensils, peg boards, etc. The activities can be done alone or in groups.

The environmental implications involve, of course, the proper material and supplies, chairs and tables of appropriate size are centered within the classroom equipped with the proper lighting and adjacent storage space. They need to be free from outside distraction. Accessibility of water. Bulletin boards to display the childrens work. Floors which are easily swept, etc. Colors which are not too stimulating.

Activities for promoting large muscle coordination require both indoor and outdoor space. The outdoor areas should be easily accessible from the classroom. Equipment should be capable of being utilized in a variety of fashions. Indoor floors should not be slippery. If a special gym area is available, the colors may be stimulating.

Physical Setting:
What type of physical setting is needed to implement the program? Many of you have heard, and so have I, that what is needed in a "home-like environment", or "natural atmosphere". What actually is meant by a "home atmosphere"? Since retardation (deprived and biological) knows no barrier (social and racial), are we therefore forced into selecting one particular home atmosphere for a preschool facility? I think not, although many of our facilities attempt to do just this. Our interpretation, and I think the correct and logical one, of home atmosphere is that homes are practical and functional for the particular family need. They are planned and designed so that every corner is utilized. It is this philosophy together with the philosophy of "contributiveness" that should be carried over into the classroom.

The physical setting therefore has a dual role.
1) a supportive role
2) a contributive role

A supportive role means appropriateness of space and furnishings, to allow the teacher and the children to conduct and implement their program more effectively than has been done in the past. The provision of basic human comforts and furnishings reduce confusion, disorder, and discipline problems. But most of all, it allows the teacher to conduct her particular program more effectively.

A contributive role means that the physical setting should help compensate for the responses (physical, emotional, psychological) that may be caused by the learning disabilities of the preschool children. The physical environment should be stimulating and "theraputic" as well as comfortable and functional. It should enhance relationships and communication among children, teachers, parents, and community. These special considerations should first of all begin with the preschool child. It should be child oriented and child sized. We need to know all we possibly can about the physical capabilities of the preschool child. Known factors about child growth, development and anthropometric conditions have a definite impact upon the provision of adequate facilities for the very young. They have specific physical needs which in the past have been neglected in lieu of consideration of adult needs.

Furniture and equipment (both indoor and outdoor) is often overly elaborate and limited to a single use or activity. Simplicity and versatility of use is needed for changes of mood, activity, and tempo.

It is the belief of our research team that logical subjective decisions, or "concept formations", should be made on the effects that the non-quantifiable variables; such as color, texture, form, space, organization of space, etc., have on the learning ability of the preschool child.

Another realistic variable of the physical setting is that of change. "The changing needs and needed changes."
Flexibility of space is needed to permit change easily: flexibility (as defined by W. W. Caudill, CRS)

1) that which allows ordered growth
2) that which can be economically adapted to program changes
3) that which serves many functions
4) that which can be changed at once and at will.

We do not create flexibility by moving partitions only. It involves much more (mechanical and electrical systems, material and finishes, and furniture and equipment). Flexibility of site, space, furniture and equipment, permits activities to grow, shrink and move.

Let's stop here and reflect on some of the statements that have just been made. I mentioned earlier that in order to understand the meaning of environment, we must first qualify its scope and then establish the variables. As you already know, we are concerned with the physical environment only, (people, program, physical setting). The variables of the physical setting are:

1) heating/air conditioning
2) lighting
3) acoustics
4) ventilation

These are basic physical properties which can be assessed and qualified in precise measurements. But most architects feel that the basic physical properties alone do not comprise the environment. They interact with the non-qualitative variables of:

5) color
6) texture
7) furnishings
8) form
9) space
10) relationships
11) groupings
12) flexibility

Considering all the different variables involved in the creation of the physical setting, we feel it is therefore necessary to assess their effect simultanously instead of individually. First of all, stimuli are perceived in combinations instead of individually. Secondly and more realistically, "tools" are not presently available to evaluate and measure the effects of stimuli, individually or in combinations. We therefore have to deal with non-quantifiable conditions qualitatively, and this means the use of subjective assessments.

The whole question arises whether it is possible, in principle, to make subjective judgements about non-quantifiable environmental conditions that will be of value to the practicing professions.

We feel that subjective judgements are valid if they are clarified and defined:

1) must realize that they are variable and should be constantly revised.
2) that judgements should be made only after a thorough analysis of existing information (actual observation, professional opinions, and existing published information) by a rational and logical "decision making" process.
3) that the program should be defined
4) that the population served should be defined

Some of these subjective assessments or "concept formations" could be made on:

a) comfort and productivity of the environment
b) satisfaction given to their users
c) efficiency of use
d) which arrangement of color, form, and layout best meets the program objectives
e) optimum use of furniture and equipment
f) type of "atmosphere" that is needed
g) etc.

How Do We Provide This Special Environment?

1) thorough understanding of the problem
2) interpetation of the problem into design and planning criteria
3) implementation of criteria into physical facility
4) evaluation of physical facility

Understanding the problem:
"Know your subject"
a) purpose of the project
b) types of children served
c) type of program
    - children activities
    - staff activities
    - parent and community activities
d) interrelationship of activities, personnel, and functional program objectives

Interpetation of the problem:
"concept formation"
a) program activities and learning disabilities are directly related to the environmental variables, and towards development of "concept formations" for contributory aspects of physical environment.

Implementation of criteria:
"architectural program"
a) concept formations used to form basis of architectural program for physical design and construction of preschool facility.

Evaluation of physical facility:
"measuring devices"
a) tools for measuring man's total environment are presently not available. Until that time, subjective decision making processes will prevail along with those individual environmental stimuli that can be measured, although it is questionable whether the measurement of individual stimuli is worthwhile since man's reaction and interpretive systems are so immensely complex.